

March, 1932

Clinical Medicine and Surgery

Volume 39

Number 3

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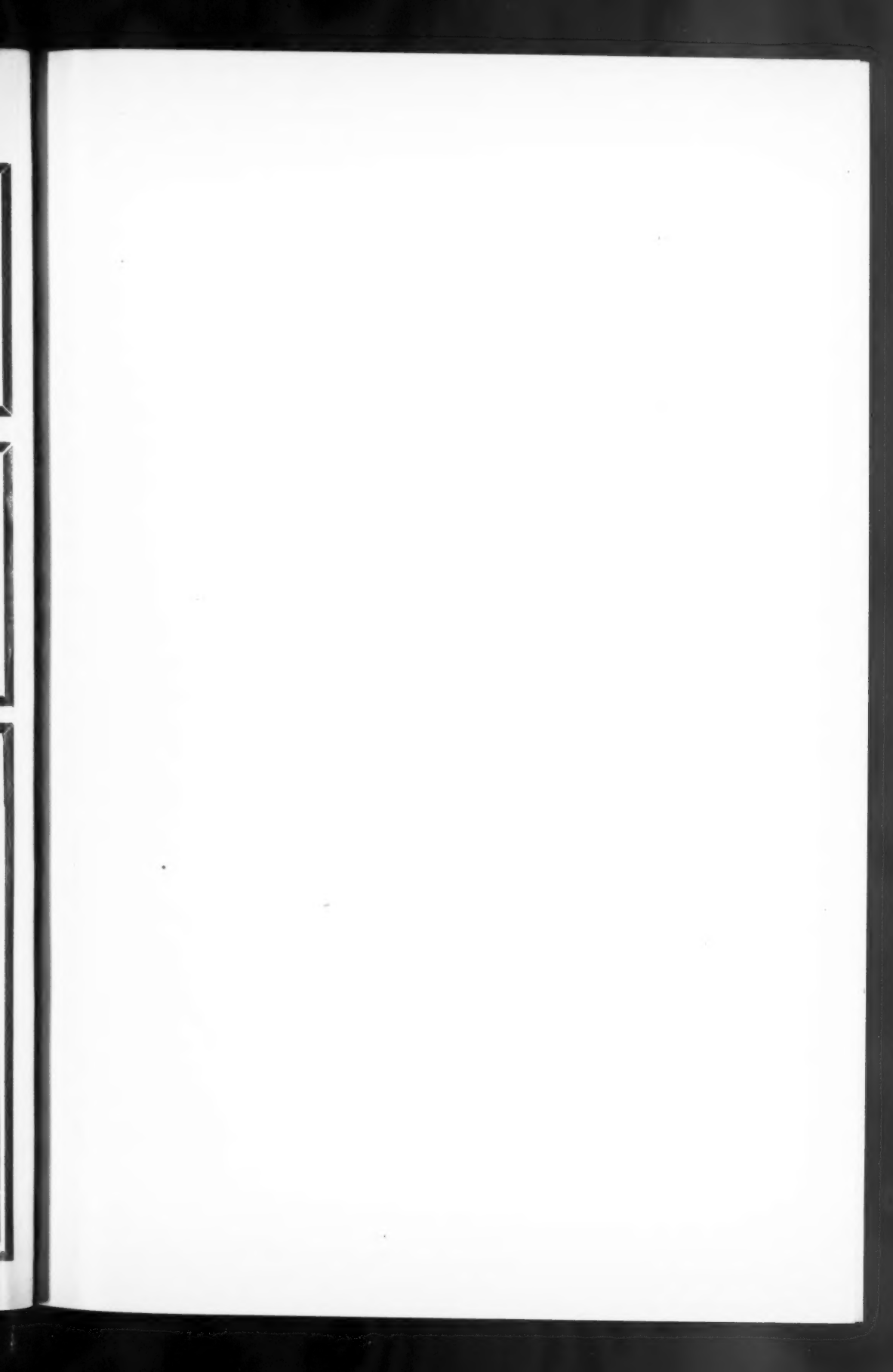
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HENRY HAVELOCK ELLIS, L.S.A.

CLINICAL · MEDICINE AND · SURGERY

VOL. 39

MARCH, 1932

No. 3

Havelock Ellis Philosopher of Love

THE chief trouble with humanity today seems to be that large numbers of people are unable or unwilling to grow up, psychically. Most of our mistakes are the mistakes of thoughtless, selfish and irresponsible children. It is vastly encouraging, therefore, to contemplate one spiritually adult man, towering up amid the welter of childishness, for if one can attain to those heights, others are given hope of their ability to do so, in some degree at least.

On September 2, 1859, at Croydon, England, while Captain Edward P. Ellis was sailing the China Sea on one of his almost continuous voyages, his wife, Susannah Mary Wheatley (also of a seafaring family), gave birth to a son and named him Henry Havelock. His father did not see him until he was nearly a year old.

Brought up almost entirely by his remarkable mother (whom he resembled in many respects), his early environment, in addition to her, consisted chiefly of his two younger sisters and of books and pictures—sound books; great books; curious nutriment for the mind of a child—but Henry was an extraordinary child!

In his seventh and eighth years, his

father took him for a voyage around the world, on a full-rigged ship of which he was captain, and on that voyage the soul of the boy was born into its functioning and his real life began. One of the outstanding incidents was a visit to Australia, where later the second stage of his spiritual parturition was to be consummated.

From his tenth to his twentieth year, he was steeped in French literature and art and began to show forth in large measure the enormously catholic and almost passionate curiosity and genius for classification which have characterized his whole life work. Before he was fifteen he was regularly writing long, critical reviews of the books he read, and penetrating discussions of the pictures he saw in the art galleries. About this time, too, he began to write verse.

He was a large-framed, handsome, shy, physically maladroit and almost overpoweringly thoughtful boy.

When he was sixteen, his father took him on another voyage, but this time he stayed behind in Sydney when the Captain sailed away and began the career of a teacher, first in a small suburban school, then as tutor in the family of a well-to-do farmer at Carcoar, 170 miles out in the

Australian bush, and later at several other places.

This phase of Ellis' life lasted for four years and his whole after course was laid out between sixteen and twenty. He read voraciously, discriminatingly and without inhibitions or taboos, and he thought in the same manner. The problems of sex, which perturb all adolescents, were a serious matter to him and, failing to find any light on the subject in his reading (except Dr. George Drysdale's now-forgotten "Elements of Social Science," the discovery of which was a landmark in his life), he resolved to devote his career to digging out the truth, theretofore buried under a mountain of prudery and ecclesiasticism, regarding the turbulent urges which upset so many lives, and giving it to the world.

During these years he was writing, developing his skill and power as a poet and going through all sorts of mental and emotional upheavals, including the experience of religious conversion.

In 1879 he returned to England and his family and plunged into a veritable maelstrom of literary, studious and pedagogic activity. As always, he read enormously during the next decade; taught school, to earn money for entering upon the medical studies, which he recognized as necessary to his life purpose; wrote many articles and his two first books ("The New Spirit" and "The Criminal"), which were published in 1890; and came in contact with James Hinton's manuscripts on moral and metaphysical subjects, which deeply colored his thinking.

Ellis spent little time in the actual practice of medicine, as he lacked the endowments of a successful clinician, but his medical training broadened and deepened his power and field of study and observation and was indispensable to his later work.

From 1890 onward the tide of his literary labors has swept forward. A bibliography of his publications fills twenty pages

—articles, reviews, essays, books. He also edited several series of literary and scientific works. His labors were as those of Hercules; his erudition is astounding.

The writings of Ellis fall into two classes (and few people know them both), the first of which consists of scientific treatises on biology, psychology and other more or less medical subjects, especially the physical and psychic basis for the manifestation of the sex urge in all its varieties. In this field, "Man and Woman" (1894) was the first; and his "Studies in the Psychology of Sex," the seven volumes of which have appeared between that time and this, will be a monument to his genius, industry and human insight for generations. These works and others are generally known to physicians and to few laymen.

The other side of his literary life and output consists of delightful, thought-stimulating essays on ethics, esthetics, sociology, history, art and the humanities in general, as well as worthy poetry, which has been unwarrantably neglected. This aspect of his life is typically illustrated in "Little Essays of Love and Virtue," "The Dance of Life," "Affirmations" and "Impressions and Comments," and no man who aspires to true culture can afford to be unfamiliar with these brave and inspiring productions of "the most civilized Englishman living today."

Although he is not a recluse, Ellis has always been shy, retiring and self-sufficient, though his human contacts have made profound impressions on those who have shared them, and sometimes on himself. He has always been the researcher, the dreamer, the mystic, the seer, the man who "took the leer out of love's language"—"the Philosopher of Love."

It is doubtful if even future generations will ever be able to form an adequate idea of the debt humanity owes and will owe to Havelock Ellis. Endowed with the rare and clarifying power of viewing life in all its phases as an intensely interested by-

stander, and with that deep inner courage which shy men sometimes possess, he has projected his remarkable mind and heart into many of the problems of mankind whose discussion has brought abuse and disgrace to many in the past, and has let in such a flood of light that no thinking man can read his writings and be just the same thereafter.

The world has rather regularly stoned its prophets, and Ellis has been the target for many of the missiles of ignorance and prurient bigotry, but his majestic head has been unbowed and he has lived to see himself recognized as the messiah of the new age of esthetic and enlightened humanitarianism and the most enduring ornament of English letters.

To function and act from the deliberate choice of intelligence is the highest form of spirituality.—J. Krishnamurti.

HELP FOR DISTRESSED DOCTORS

THERE are in this world few persons more worthy of one's pity than the ill and impecunious—or "down and out"—physician and the members of his family. Too proud (in the best sense of that word) to patronize breadlines or ask for charity, they frequently suffer, because of their background, much more acutely than those others whose fall in the world has been from a lesser height.

Because of their peculiar situation, these people are hard to help, and few organized efforts in this line have been made.

Now, however, comes the Physicians' Wives' League, of New York, with just such an object in view—"To render service, material, educational and spiritual, to the physician's family and to members of the profession licensed to practice in New York."

Themselves the wives of physicians, these estimable women know, in their own hearts, how it would feel for such as they to be in destitute circumstances, and are thus inwardly fitted to minister, with tact and sympathetic understanding, to those

of their brothers and sisters who are less fortunately situated than they.

It happens not infrequently that a medical man, through a mistaken sense of the dignity of his profession, fails to give adequate attention to the economic side of his work and, in the middle or at the end of a life of unselfish usefulness to his community, is stricken by disease or death when his affairs, often through no real fault of his own, are in no condition to meet such a calamity. When such a misfortune occurs, the man or his family or both frequently suffer, not merely from physical hunger, but from those hungers and pangs of the soul which make life scarcely worth living.

Or, mayhap, the distressing condition is only temporary and the doctor, if he could find someone to tide him over the financial crisis, would be able, after a time, to make full repayment.

The Physicians' Wives' League strives, so far as possible, to meet such crises. If the physician needs money temporarily, a loan is arranged; if a long or mortal illness is upon him, he is aided in keeping up his insurance premiums and in taking care of the things necessary to life or, perhaps, the grown members of his family are assisted in learning how to contribute to the family income; if he dies, leaving his family without resources, its members are cared for, trained for self-support and positions are found for them. Any person of wide experience or vivid imagination can visualize the immense possibilities of valuable and unique service open to an organization like this.

So far, unfortunately, only the physicians of the State of New York are eligible to such assistance, for this is the first enterprise of its kind in the United States, if not in the world. But there is no reason why the wonderful women, of large sympathies and keen vision, who are the wives of the physicians of any or all of the other states, should not embark upon similar undertakings for the amelioration of

the condition of a class of our people which is of immense value to the Nation and which, otherwise, will not be assisted at all and will, therefore, suffer in proud and aching silence, as these people have always done in the past.

Here is a *real job*, for the women with understanding, experience and ability in executive or administrative lines, to do something that is urgently needed in other states, but which can be performed with the proper diligence and delicacy to make it acceptable and satisfactory, only by those who are in a position to appreciate the feelings of the ones they would help.

In order to be fit to save others, we must try to save ourselves.—Mahatma Gandhi.

IRRESPONSIBLE GOVERNMENT AND DISASTER

IF ONE were to see a man throwing his money about like a drunken sailor—making unnecessary and extravagant purchases, and investments having no shadow of soundness—and permitting irresponsible people to borrow and evil-disposed persons to steal his belongings, it would not require the wisdom of Solomon to predict that he would land in the poorhouse at the end of a period of time corresponding to the size of his fortune and the blatancy of his foolishness. A community or a nation is an *organism*, under the sway of the same laws which govern the activities of the smaller organism we call a man.

We have long maintained and still feel that politics has no place in a medical journal; but this matter of foolish extravagance, inefficiency and outright theft on the part of various governing bodies has gone far beyond party politics (both great parties are tarred with the same brush) and has become a question of national economics and sociology, and the continuance of present conditions threatens the soundness, and perhaps the very existence, of our country, so that every citizen should inform himself (or herself) as to the exist-

ing predicament and the reasons why we have reached it, and focus attention upon the discovery and application of measures for its correction. We feel bound to urge this duty upon all physicians, as representative citizens.

One needs only to read the current newspapers and magazines to find plenty of detailed examples of stupidity and malfeasance in public offices, municipal, state and national. That is bad enough, but the same sources of information will bring abundant evidence of the disastrous results of a centralized paternalism which is subverting the spirit of this Nation and pyramiding taxes upon the shoulders of the whole citizenry, in order to bring fame, power and fortune to a small minority of bureaucrats and persons who are in the game for revenue or prestige only.

As an example of waste, look up the details of the construction and maintenance of the new \$17,000,000 Department of Commerce Building where, with thirty-six elevators in operation, it is reported that the Secretary has one for his own exclusive use, with an operator receiving a salary of about \$2,000 a year—a soft job for the friend of some politician!

The paternalistic tendency is even worse and more costly, and evidences of inefficiency (to use no more invidious word) stare one in the face on every side. One project, sponsored by soft-headed sentimentalists and determined selfservers, and of special interest to physicians, which we thought was delightfully dead and buried, but which is in process of resurrection, was the Sheppard-Towner Act which, after functioning for seven and a half years, was repealed in 1929.

This Act, which cost the taxpayers \$11,000,000, did not develop a single new idea in the field of maternal and infant hygiene, nor did it reduce the maternal or infant death rates in the states where it functioned by so much as a fraction of a point per annum.

And yet this delicious bit of paternalistic pork has been exhumed and presented to the Congress again, as two bills in the House (H.R. 4739 and H.R. 7525) and one in the Senate (S. 572). These will be vociferously championed by the people who will make a living from them and by the unthinking sentimentalists who burst into tears whenever the words "mother" or "baby" are mentioned; and *they will be passed*, unless many physicians and other people who have the machinery to *think*, instead of merely to emote, send in their protests *at once*, to their representatives in the Congress, in no uncertain terms.

But back of the sufficiently disastrous conditions which have developed at home, because of the disgraceful and careless selfishness of many of our so-called substantial citizens, who leave political affairs in the hands of professionals and make no effort to improve matters, there seem to loom international plots and plans of even more sinister possibilities. Details of some of these are beginning to come to light, in spite of powerful (and generally successful) efforts to suppress them. Write to the Chemical Foundation, Inc., 654 Madison Ave., New York City, for a copy of the booklet, "Other People's Money" (free).

Bear in mind that the percapita cost of government has, in twenty-five years, increased from \$6.64 to \$32.96; taxes have increased 500 percent in twenty years, while the population has increased only 33 percent; and the cost of bureaus, commissions and departments, most of them engaged in paternalistic enterprises, has increased, since 1910, according to one authority, 900 percent (from 173 million to 1,560 million dollars). Then watch how your representatives in the Congress and Legislature vote on these matters—and act accordingly.

This is not a matter of personalities nor of parties, but of deep-lying and fundamental policies and projects. No good will come of calling persons or groups by un-

savory names nor of raking up individual peccadilloes. We must trace these tendencies in government back to their beginnings, discover the sources from whence they sprang and *dry up those sources*. Anyone who has an open mind and a sincere purpose to gain knowledge can pick up enough of these trails to appall him.

The American citizen, of whatsoever party, creed, profession, color or shade of opinion, who neglects to inform himself adequately as to what is going on and sits back supinely without making any serious effort to do something about it, is unworthy of that citizenship and deserves whatever fate may overtake him.

Untiring vigilance and thoughtful attention are the keys to the sealed gates.—PROF. NICHOLAS ROERICH.

PAYING FOR RESEARCH

WHEN some new and highly efficient drug is brought to the attention of certain physicians, they express interest—but not enough to cause them to purchase the product and use it. They seem to feel that someone is trying to take undue advantage of them by charging a stiff price.

Fifty years ago, if a patient was in severe pain, the doctor could give him a dose of laudanum or apply a hot brick. The former was relatively cheap and decidedly dangerous; the latter cost nothing and was often worthless. If he needed a surgical operation, he was given chloroform (or perhaps ether), had a very unpleasant time of it, before and after, and stood a fair chance of dying as a result of the anesthetic.

Today we have a wide choice of elegant and effective analgesic drugs and physical agencies at our disposal; also much safer and more effective general and local anesthetics. These cost more, but they work far better and more certainly and thus contribute largely to the wellbeing of the patient.

It would be interesting to know how many physicians have any idea how these

new and improved methods come about or how many thousands of dollars are expended in research upon a new product before it is offered to the medical profession for therapeutic use.

We are using many potent drugs, these days. If they are not all right, they are *all wrong*. How many ever stop to think what it costs to weigh, test and standardize the preparations they are prescribing or dispensing every day, in order that they may *know* that their patients are getting *exactly* the prescribed doses of the identical medicaments they have prescribed, and *nothing else or other*?

Our methods, at best, are none too certain when we give drugs—especially when they are given by mouth. If the picture is complicated by guessing about the potency, purity and dosage of the remedies prescribed, a truly conscientious physician will suffer from insomnia. If administration into a vein is used, it is even more important to know *just what the patient is receiving and how much*, because one cannot retrieve it if it was wrong in the first place.

Of course, any person can make almost anything worse and sell it for less; and some physicians content themselves (if not

their patients) with the therapeutic armamentarium of their grandfathers, just because it is *cheap*.

Patients want to recover as quickly, pleasantly and safely as possible and will respect, admire and *remunerate* the physician who helps them to do so. So far, many of the newer drugs are the surest, safest and most rapid method of accomplishing this result. They may cost more, but *they are worth it*. If the patient were given a chance to decide the question he would, in practically every case, plead to be treated with the best and most reliable drugs available, even though they do cost more.

The prices of the newer drugs have to be set so that the cost of the actual research and standardization, as well as of manufacturing and distribution, will be met over a period of a few years, or such work could not go on, on anything like its present scale.

Of course, a physician can, if he chooses, go on practicing eighteenth century medicine, or can give his patients cheap substitutes for sound, reliable, advertised products; but if he does so he will probably have plenty of time for backgammon this spring and fishing next summer.

MOON-SPIDER

The moon-spider sits, in the midst
Of her web of cirrus cloud filaments,
Patiently, patiently waiting
While the little star-flies
Become entangled in its meshes.
Presently she will eat the star-flies
And grow fatter and fatter
Until, some night,
Star-flies and web and everything
Will be gone.
Then she will sit there, all alone,
In a circle of pale-blue,
Opalescent midnight sky.

—G. B. L.
In *L'Alouette*

LEADING · ARTICLES

Irradiated Sterols in Therapeutics*

By Professor René Fabre, Paris, France

Associate Professor, Faculty of Pharmacy, Paris; Chief Pharmacist to the Hospital Necker;
Editor-in-chief *Bulletin de la Société de Chimie Biologique*.

RICKETS is a disease unfortunately too frequent in our cities, where people have become adapted to a mode of life deprived of sunlight. Rickets is an avitaminosis of a rather particular type; it does not cause death and, by this fact, is differentiated from other deficiency diseases the result of which, in general, is progressive and always fatal.

Rickets is seen only in the young, when it affects the formation of a special tissue—the bony structures. Disturbances of the morphogenesis of this tissue are characterized by an abnormal and irregular development of the cartilaginous tissue, but osteoblasts are no longer differentiated; consequently there are no longer any osseous cells.

We also find disturbances of mineral metabolism, translated principally by a marked diminution of the mineral phosphorus of the blood. Diminution of the ash content of the osseous tissue is likewise a good criterion, while other characters show less specificity, such as, for example, variation of the reaction of the feces.

Rickets, which has engaged the attention of physicians since Glisson's report, nearly three hundred years ago, has been combated by two quite different agents: sunlight and cod-liver oil. However, up to a few years ago, the therapy of infantile rickets was purely empiric and no points of common action could be distinguished between the two apparently dissimilar methods of treatment.

Experimentation was, in fact, difficult because it was not known how to produce the lesions of rickets at will in animals;

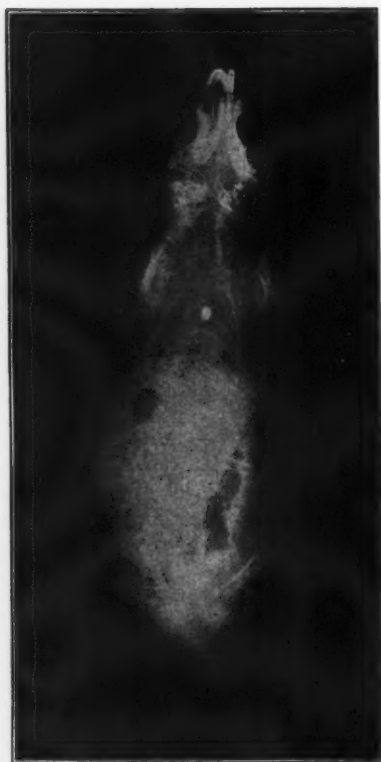
also because the efforts of physiologists were in vain until Mellanby, in 1919, submitting a young dog to an arbitrarily selected diet, observed lesions approximating those which characterized spontaneous rickets. Hess proved that these lesions were not due to lack of the lipo-soluble vitamin, and that a diet containing this vitamin, but with a dis-equilibrium in the calcium-phosphorus relation, was capable of causing ossification disturbances similar to those observed in rachitic infants. These experiments, confirmed by those of McCollum, Pappenheimer, and Scherman, showed that, in the white rat, experimental rickets of purely alimentary origin could be produced.

Biologic analysis of foods, applied to the study of rickets, became extremely important; the authors mentioned established diets of unequal values, but all presenting a defective calcium-phosphorus proportion, which were shown to be more or less capable of rapidly causing the typical disturbances of rickets.

Among the tests for rickets, in my opinion, one of the surest and unquestionably the most practical, since it can be carried out on the living animal, is the radiographic test. The accompanying illustrations enable one to observe the presence of rickets and the curative results of treatment. To obtain such pictures, in the case of the living animal, it is necessary to employ a source of x-rays of the type which will permit short exposures, say one-fourth of a second; the condition of the animals can thus be assured in a simple manner and the tests are quite comparable.

An interesting matter in researches on experimental rickets is that the agents recog-

*Translated for CLINICAL MEDICINE AND SURGERY.



Koenigstein's oil fat showing severe rickets. Note the metaphysis of the tibia.

nized as efficacious in the treatment of this disease also cure spontaneous infantile rickets. In both cases cod-liver oil, as well as sunlight, favor recalcification and cause the disappearance of the characteristic signs.

This finding of a similar biologic action, produced by therapeutic agents which are so different, denotes a fact of the highest importance, which has turned the research for an anti-rachitic factor toward an entirely new direction.

COD-LIVER OIL

The therapeutic activity of cod-liver oil has been attributed successively to all the chemical principles which could be isolated from it; elaborate theories were outlined and numerous pharmaceutical products were put out accordingly, as fatty acids, alkaloids, iodine or arsenic were recognized as the beneficent agent of this medicament, which is best known as a disliked souvenir of infancy.

It has been asked if other oils, more

agreeable in taste, did not possess the anti-rachitic action of cod-liver oil, and indeed by biologic examination it was possible to establish the fact that a number of oils, prepared from various fishes, possess this property, but their taste is no more agreeable than that of cod-liver oil.

Fractioning of cod-liver oil, by saponification, assured the relative activity of each portion of it. Thus it was demonstrated that its anti-rachitic activity was localized in the unsaponifiable fraction; more exactly, in the isolated sterols.

Since the sterols of cod-liver oil were active, it was natural to suppose that sterols recovered from the brain, for example, would have the same property. Physiologic experimentation proved that this was not so, and this failure would certainly have discouraged biologists, if they had not thought of connecting the anti-rachitic property of cod-liver oil with that of sunlight.

As a matter of fact, it had been for a long time observed that sunlight acted on rachitic infants and favored their recovery. This was more rapid on the sea coast or at a certain altitude, far away from towns and smoke, and it was logical to attribute the greatest action in the treatment of rickets to the rays of short wave-length—the ultraviolet rays.

ULTRAVIOLET RAYS

Thenceforth, treatment by sunlight was replaced by treatment with the richest sources of ultraviolet radiations, such as, for example, the mercury-arc lamp. Most excellent and rapid results were observed from irradiations of short duration. The practice of actinology immediately became extensive and very considerable success was reported. This complex radiation with mercury arcs, in which the spectral disposition of energy varied considerably, according to the type and age of the lamp, was capable, by means of certain of the rays which were emitted (although up to then insufficiently selected), of successfully coping with rickets. It seems now that the most active radiations correspond to that part of the spectrum in the neighborhood of 3,000 Angström units.

IRRADIATED FOODS

Attempts to irradiate foods were logical, and recently Alquier, confirming the works of Hess & Steenbock and Black, irradiated

Madame Randoïn's and Lecoq's rachitic diet, and rats receiving this diet showed none of the characteristic symptoms of rickets.

There are, in foods, principles susceptible of becoming biologically active by irradiation, and numerous authors have subjected a great variety of alimentary substances, ordinarily ineffective in rickets, to irradiation by the mercury arc. It was thus observed that ultraviolet irradiation, under suitable conditions, had a favorable action upon the development of an anti-rachitic principle in the most diverse products, such as vegetable oils (olive, cocoa and nut), brewer's yeast and fresh or dried milk. On the other hand, certain substances remained perfectly inactive; this was the case with oxyhemoglobin of blood and albuminoid substances.

One important fact was noted: Substances capable of being activated become inactive by a too-prolonged action of the ultraviolet rays. It would therefore seem as if these rays cause the formation of an anti-rachitic factor as an intermediate product of the photochemical reaction. This observation is, besides, confirmed by another interesting finding; i.e. that cod-liver oil active prior to irradiation loses its biologic activity on exposure to ultraviolet irradiation.

There was evidently some relationship between these two phenomena and it was considered that if cod-liver oil became inactive by irradiation, then its biologically active principle resulted from a prior photochemical transformation of determined substances, which also existed normally in foods which could be activated by irradiation with the mercury arc, but again became inactive by too-prolonged irradiation. The anti-rachitic factor appeared, therefore, to be some fleeting product of a complex photochemical reaction, ending in compounds totally deprived of biologic activity.

I have already indicated that the active part of cod-liver oil was constituted by the sterols contained in its unsaponifiable fraction and that the cholesterol extracted from the brain was quite inactive.

THE STEROLS

In 1925, different biologists—Hess & Steenbock, Rosenheim & Webster, as well as Simonnet and myself—established that the protective action of cholesterol, irradi-



Roentgenogram of rat cured of rickets with irradiated ergosterol.

ated for half-an-hour and administered to white rats in a dosage of about 1 mgm., was similar to that which was observed with doses of 15 to 20 ctg. of cod-liver or of 3 to 4 mgm. of the unsaponifiable fraction of this oil.

Cholesterol, therefore, underwent a photochemical transformation, rendering it active, under the influence of shortwavelength irradiation, and it appeared justified to attribute the antirachitic property of irradiated foods to the presence of some substance proper to cholesterol (which they contained in varying quantities), by a process which remains to be explained. Thus, in 1925, the relation between cod-liver oil and solar radiation received an explanation which would have caused great surprise some years before—an explanation which becomes more satisfying still, according to actual biologic researches.

The irradiation of cholesterol did not always lead to equally active products, and this difference might be attributed to sev-

eral equally valid causes. The first of these causes consists in the fact that irradiation is sometimes carried out under conditions which are rather too primitive. Cholesterol, dissolved in a solvent which is itself sometimes sensitive to the action of the ultraviolet rays, such as alcohol or chloroform, can be irradiated at a short distance from the source without any precaution; however it is easy to observe a very notable rise in the temperature, as well as the formation of a considerable proportion of ozone, each of which factors can exercise its own proper effect, which is sometimes prejudicial to the desired end.

The second cause which intervenes in creating unequal values in anti-rachitic products is the chemical composition itself of the cholesterol whence they originate. The researches, carried out toward the end of purifying the sterols intended to be irradiated, have led to results of the highest interest, since they have ended in bringing in evidence the very considerable biologic activity of the vegetable sterols, the type of which is *ergosterol*.

Among others, Windaus had shown that cholesterol, purified by passage in the debrominized state and regeneration on being freed from its bromine combination, was not susceptible of activation following irradiation; following the observation of more recent writers—Bills, Honzywell & McNair, or Jendrassi & Kemeniffy—it seems that such a product, obtained even after the most minute manipulations, is still slightly capable of activation, but very much less so than the original product.

Animal cholesterol seems to contain a product more sensitive to ultraviolet rays and destroyed by the action of bromine or reaction agents employed in the process of its purification.

Ergosterol, so sensitive to ultraviolet irradiation, is also susceptible of becoming biologically active under the influence of sunlight.

I noted this fact, from the beginning of my researches on ergosterol with Simonnet, in the following way: Having at my disposal, thanks to the kindness of Tanret, a sample prepared by him in 1889, this product was subjected to the biologic test, and studied from the point of view of the determination of the ultraviolet absorption test of its solution. The product was observed to be notably antirachitic; it could only have acquired this property under the

action of solar light filtered through the laboratory glass, not containing any short-wave-length rays.

This observation proved the necessity of attempting physical and biologic tests only on a purified product, avoiding the action of air and light as much as possible. Such a sterol was biologically active only after irradiation. It was with such a sample that my researches with Simonnet were carried out, so that causes of error, arising from alterations and impurities could be excluded. Such were sometimes numerous and sufficient to disqualify commercial products.

SUMMARY

Summing up my researches, I have shown the steps by which it has been found that an antirachitic activity may be attributed to irradiated ergosterol, which authorizes us to qualify it as *provitamin D*. The product obtained when ergosterol is submitted to ultraviolet irradiation, under proper conditions, possesses, in fact, very marked antirachitic properties, since the curative dose is 1/10,000 to 1/20,000 mgm. per 100 grams of animal weight. The calcifying effect on the white rat is still appreciable with a dosage of 1/100,000 mgm. Verification of this activity can, in the present state of our knowledge, be effected only by biologic test. All the chemical or physical tests which have been proposed have an unquestionable value; they prove the photochemical transformation of ergosterol, confer on it oxidation properties (aniline and potassium iodide oxidation), a remarkable action on the photographic plate, a varying transparency to ultraviolet rays; but, in the last analysis, a vigorous biologic test still remains necessary to confirm the antirachitic value of irradiated ergosterol.

The therapeutic armamentarium is, therefore, following the work that has been carried out, enriched by an extremely interesting product; but, before applying it in human medicine, it was necessary to submit the mixture resulting from irradiation of sterols to a toxicity test. Two investigators have described toxic effects, which naturally aroused clinicians. I should mention that such complications were observed only with doses 200 to 300 times stronger than activating doses. What medicament is there that would not be toxic under such conditions?

Toxicity tests have been pursued by

Tanret and Simonnet under all necessary precautions. These authors have observed that lesions of generalized calcification, with atrophy of the spleen, were very variable, according to the species of the animal tested; they were positive in the rabbit and cat and negative in the dog, guinea pig and chicken; and, taking into account the enormous doses administered, it is logical to think that, with the activating doses normally prescribed, irradiated ergosterol is in no way toxic, on condition that the irradiation is properly effected. Moreover, in young organisms, danger is still less to be feared, the bones fixing the disposable calcium.

In conclusion, there is no medicament which, in ill-considered doses, would not

exceed the limits of its therapeutic activity.

The biologic sciences are sometimes discouraging, by reason of their difficulties; but they are so well worth while and so fascinating, through the objects pursued, that investigators should be attracted to their task, which is as noble as any of the better-known phenomena of life.

If, moreover, as in the case of the problem of the irradiated sterols, these researches aim at a practical end; if the biologist, working modestly in the silence of his laboratory, contributes, even in some small part, to restore health to the little infant, his efforts will be largely repaid, because he will experience the great satisfaction and the great reward of having served humanity well.

The Story of Ragweed

By O. C. Durham, Chicago, Ill.

WHILE certain ragweed species have been reported growing in Southern Europe and Asia Minor since the time of the first systematic botanists, the common hay-fever ragweeds of North America are strictly native plants.

The first authentic records of short ragweed and giant ragweed are 250 years old, being found in a pre-Linnean publication¹ written in England some time before the year 1680. The plants from which Robert Morrison wrote these descriptions were evidently collected by one of the early settlers in Virginia. It seems that a certain Mr. Colden forwarded specimens, or at least descriptions, of American ragweed to John Fredrick Gronovius², in Leyden, previous to 1743. The botanical names by which these plants are known today were chosen by Linnaeus, the father of modern systematic botany, and published in his famous *Species Plantarum*³, in 1753. (Fig. 1).

Whether ragweed followed civilization west from the Atlantic coast or whether it had existed for centuries in the Mississippi Valley, will probably never be known, but of one thing we are sure; that, until the land was cleared, broken and cultivated, short ragweed could not have been a very common plant. The fall hay-fever

map found in an early American book on hay-fever, written by Dr. Morrill Wyman, in 1876 (Fig. 2), would lead us to believe that, at that time, there was no ragweed west of the Mississippi River. This could easily have been true of short ragweed and might have been true of giant ragweed, although we know that the latter does not require cultivated soil, but is perfectly at home in the kind of river-bottom land which would have been available at any time previous to the settlement of the midwestern section by the white man.

Only about four American species of ragweed, including cocklebur, were known 150 years ago. Now more than 100 species are known to exist in the United States. Of these, the two common ragweeds mentioned above are much more important in allergy than all the rest.

RAGWEED AND HAY-FEVER

We have no way of knowing whether or not the early colonists suffered from fall hay-fever, as the disease had not then been recognized, but there are authentic records of ragweed hay-fever symptoms experienced nearly 125 years ago. Long before hay-fever had been described, a certain Mr. Samuel Batchelder⁴, of Cambridge, Mass., began to experience an un-

MONOECIA PENTANDRIA.

PENTANDRIA.

XANTHIUM.

1. XANTHIUM caule inermi. *Hort. cliff.* 443. *Hort. Romanorum*: *apf.* 284. *Fl. Jacq.* 778. *Fl. Zeyl.* 569. *Mar. med.* 424. *Rev. legd.* 85. *Grav. virg.* 188. *Hall. herb.* 161. *Dalib. parif.* 290. *Xanthium. Fusch.* *hif.* 579. *Lappa minor* f. *Xanthium dioecoridis. Bauh. pin.* 198. *Xanthium elatius & majus americanum, fructu spinulosis aduncis armato. Morif. hif.* 3. p. 604. f. 15. t. 2. f. 2. *Xanthium majus canadense. Herm. legd.* 635. *Habitus in Europa, Canada, Virginia, Jamaica, Zeylona, Japonia.* ☉
2. XANTHIUM spinis ternatis. *Hort. apf.* 283. *Xanthium spinis triplicibus. Hort. cliff.* 443. *Rev. legd.* 85. *Xanthium spinosum, atriplicis folio. Morif. hif.* 3. p. 604. f. 15. t. 2. f. 3. *Xanthium lontanum spinosum. Pluk. alm.* 206. t. 239. f. 1. *Herm. paraf.* 246. t. 246. *Magn. hort.* 208. t. 208. *Habitus in Lulitania.* ☉ *Spina trifurcata fere pinnata, quarum altera sit fructus.*

AMBROSIA.

1. AMBROSIA foliis trilobis serratis. *Hort. apf.* 284. *trifida. Ambrosia foliis palmatis: lacinias lanceolatis serratis. Hort. cliff.* 443. *Grav. virg.* 188. *Rev. legd.* 86. *Ambrosia virginiana maxima, pinnis orientalibus folio. Morif. hif.* 3. p. 4. f. 6. t. 1. f. 4. *Ambrosia gigantea inodora, foliis alperis trifidis. Raj. suppl.* 109. *Habitus in Virginia, Canada.* ☉ *Commanis in Hortis planta foliis trilobis est, at varietas major, foliis inferioribus quinquelobis glandet, cujus fructificationem non vidi.*
2. AMBROSIA foliis bipinnatifidis: racemis panicula-elatis ✓ *tis terminalibus glabris. Hort. apf.* 284. *Ambrosia foliis composito-multifidis: internodiis remotissimis. Grav. virg.* 188. *Cold. vetch.* 225. *Ambrosia maritima, foliis artemisia inodori, elatior. Herm. legd.* 33. *Raj. suppl.* 109. AM.

1.—Page from "Species Plantarum", by Carl Linnaeus, published in 1753. *Ambrosia trifida* is our giant ragweed. *Ambrosia elatior* is our common short ragweed.

interrupted period of annual fall suffering which, some 68 years later, was recognized by Doctor Wyman as hay-fever. Doctor Wyman's own symptoms began in the fall of 1833 and Daniel Webster's the year before, the latter being a ragweed sufferer until his death in 1852. Among other ragweed victims should be mentioned the famous preacher, Henry Ward Beecher, and Chief Justice Shaw.

Just after the Civil War, Doctor Wyman began a series of botanical experiments to determine what part, if any, ragweed plays in fall hay-fever. He believed it to be an important factor, but his work was not carefully done and failed to convince the Doctor, himself. While these experiments were being made in America, Blackley was pursuing his brilliant pollen studies in England, proving beyond controversy that pollen is the sole exciting cause of hay-fever.

Many present-day writers have been astonished at the lack of progress made in the thirty years following the fundamental work of Wyman and Blackley. As late as 1896, a reputable medical publication gave space to an article⁵, in which it was argued that, since the maximum amount of pollen which a person can normally encounter is so insignificant, pollen cannot possibly be the exciting cause of hay-fever.

POLLEN THERAPY

At the turn of the century, crude attempts began to be made at pollen immun-



2.—Map from Wyman's "Autumnal Catarrh (Hay-Fever)," published in 1876. At that time, the Mississippi seemed to be the western boundary of the ragweed area.

ization. At first the extract of whole ragweed was given hypodermically and later orally⁶. Then, pre-seasonal daily inhalations of dry ragweed pollen were tried⁷. Present-day therapy, with pollen extracts by hypodermic injection, was begun in the United States in 1910 by Dr. Karl K. Koesler⁸, of Chicago, on a group of 41 patients. Today there are at least 100 physicians in various parts of the United States spending all or a large part of their time in the study and treatment of hay-fever and pollen asthma, although the bulk of pollen treatment is administered by non-specialists.

AIR RESEARCH

The first attempt at a quantitative study

Atmospheric Experiments.

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both situations, and continued to be present up to the end of the hay-fever season. In both the years named the same results were obtained.

As Dr. Marsh was, on account of the severity of his attacks, obliged to leave home before the season was over, a non-medical friend carried on the experiments for him. The following is a specimen of the observations made in 1875:

August	28th, one day's exposure, 80 pollen grains			
"	29th	"	51	" "
September	2nd	"	4	" "
"	3rd	"	112	" "
"	6th	"	204	" "
"	8th	"	310	" "

on a square
centimetre.

On September 10th this same friend sent a couple of slides to a friend in New York, with a request that he would expose them on the window-sills of his house (Twelfth Street, New York) for two days, and then return them. When the slides were examined they were found to contain thirty pollen grains of the *Ambrosia* on the square centimetre. On September 8th, a slide placed on the roof of the gentleman's own house in Paterson collected forty-nine pollen grains in nine hours; whilst a slide placed on the lawn in the garden collected three hundred and ten in the same time.

3.—First record of the investigation of the ragweed pollen content of the air in America.

of ragweed pollen floating in the air during the fall, was made by Dr. E. J. Morris, in Paterson, New Jersey, in 1875, at the suggestion of Doctor Blackley, of England. He exposed oil-coated slides at his home during August and September (Fig. 3) and persuaded a friend to expose slides on his window-sill in Twelfth Street, in New York, for two days—September 10 and 11. The records thus obtained, though incomplete, compare very favorably with figures that can be obtained on the same dates at the present time in these localities.

The literature does not show that any further attempts at atmospheric pollen work were made until those of the enthusiastic Dr. William Scheppegrell⁹, who began experimenting with pollen slides in New Orleans about 1916. He made daily records of the amount of ragweed pollen in the air in New Orleans during the seasons of 1916, 1918 and 1922. In 1923 he conducted extensive upper-air experiments¹⁰ with airplanes, finding that ragweed pollen often ascends, in heavy concentration, to the height of a mile.

Atmospheric research was resumed in 1925, when two local studies were carried on, one in Chicago¹¹, and one in Buffalo¹². Since that time, more than 150 such studies have been made and, beginning in 1929, each fall, I have conducted

nation-wide atmospheric pollen studies¹³, with the aid of the United States Weather Bureau, making daily slide exposures in all parts of the United States. Since 1928, the Canadian Meteorological Service has also assisted. The results of this work are valuable in confirming the field studies on the effective geographic distribution of the ragweed and are also of great assistance in understanding the cause of the fluctuation of hay-fever symptoms. Much is being learned that is useful in the intelligent planning and administering of pollen treatment.

We now conceive of ragweed pollen as a national "crop," amounting to hundreds

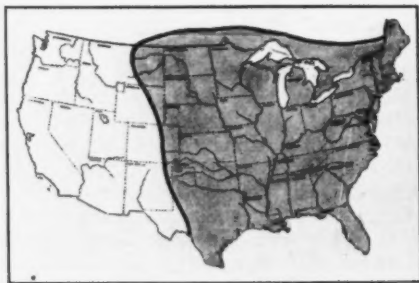


4.—Short Ragweed (*Ambrosia elatior*).

of thousands of tons of invisible, toxic material, which is dumped into the air over the eastern half of the United States and blown far and near by the wind. In our northern states, the pollen storm begins about August 15, reaches its greatest severity in two weeks, and is over in a month. In the southern States the storm lasts much longer, continuing in some places until the last of October. Only the north Pacific coast of the United States is entirely free from ragweed pollen, though the east coast of Florida is practically so. In Canada, only the southern part of Manitoba, Ontario and Quebec is involved.

DESCRIPTION AND DISTRIBUTION OF SPECIES

The ragweed family gained its name and reputation from the appearance and "criminal" record of the most widely distributed



5.—Approximate Distribution of Short Ragweed.

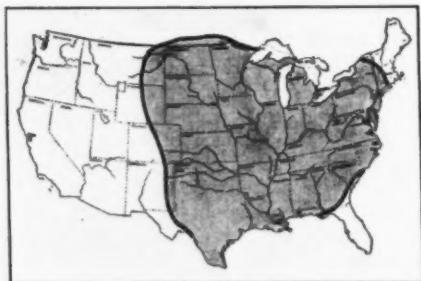
member of the group, common or short ragweed, formerly known as "Roman wormwood". The ragged appearance of the finely-divided leaves (Fig. 4) doubtless suggested the name "ragweed," and its resemblance, in leaf form and color, to certain species of sage or wormwood (*Artemisia*) suggested both the botanical specific name "*artemisiafolia*", and the common name "Roman wormwood".

Short ragweed is found in all parts of the United States east of the Rocky Mountains (Fig. 5), except where the soil is entirely unsuited or previously occupied, as in deserts or forests. It is also found in the agricultural districts of southern Canada, but the season is far too short for its development north of the fiftieth parallel. A hundred years ago the White Mountains of New England were free from ragweed and are probably still so. Western Washington and northwestern Oregon are also entirely free from the plant, and it is not found growing in profusion west of the one hundredth meridian. In fact, this ragweed requires an annual rainfall of about 20 inches. The agricultural districts of the central, southern and eastern states are now the undisputed home of ragweed. Under our present system of agriculture, nothing effective can be done about it.

Giant ragweed (Fig. 6), sometimes called horseweed, is the largest member of the family. Its average height is probably six feet but, under favorable conditions, it will easily grow to 17 feet. In most parts of the United States east of the Rocky Mountains, it holds undisputed sway in ditches and rich, neglected, river-bottom soil. The appearance of its blossoms is the chief point of similarity between it and its shorter and more adaptable relative.

6.—Giant Ragweed (*Ambrosia trifida*).

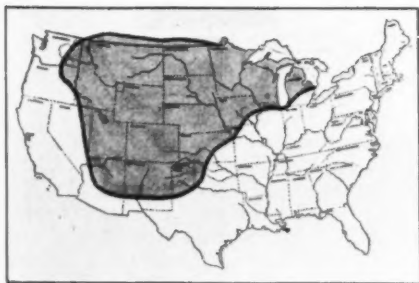
Giant ragweed is found in much the same area as short ragweed (Fig. 7), except that it is absent along the eastern seaboard, from South Carolina to Florida,



7.—Approximate Distribution of Giant Ragweed.

nor is it at all common east of the Connecticut River. Conditions are not favorable for its growth in Canada, except in the extreme southwestern part of Ontario. It is interesting to note that, though the giant ragweed is abundant in Buffalo, it is entirely absent in Toronto.

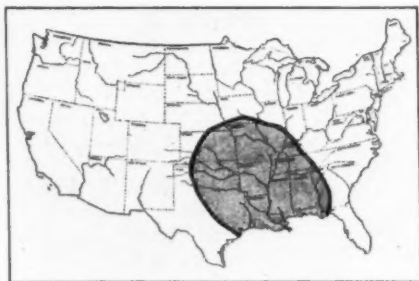
Cocklebur is a common member of the



8.—Approximate Distribution of Burweed Marsh Elder.

ragweed family, but its wide distribution is offset by its comparatively small output of pollen.

In the north central and mountain states, a ragweed known as "burweed marsh

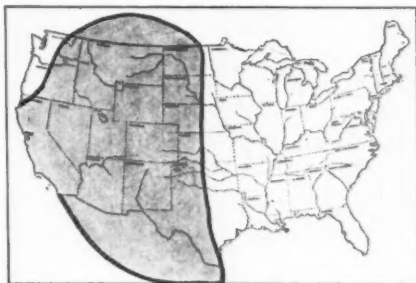


9.—Approximate Distribution of Marsh Elder.

elder," "prairie ragweed" or "giant poverty weed" (Fig. 8—*Iva xanthifolia*) is of considerable importance. Its relative, rough marsh elder (Fig. 9—*Iva ciliata*), is common in moist areas in the southern states. Northern Texas has another marsh elder (*Iva angustifolia*), a narrow-leaved variety, whose importance has not been determined.

Western ragweed (Fig. 10—*Ambrosia psilostachya*), a perennial variety, is common and important in dry soil west of the one hundredth meridian, except in western Oregon and Washington. It is also found in Mexico.

Southern ragweed (*Ambrosia bidentata*) is found, often in as great profusion as short ragweed, in and around the Ozark region.



10.—Approximate Distribution of Western Ragweed.

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PHYSIOLOGY AND DISEASE SYMPTOMS

The functional reactions of disease do not differ intrinsically, but only in degree, from those in health. The so-called symptoms of disease are nothing more than intensified or depressed reactions which, if not actually in operation, are at least potentially available in the normal organism. No pathologic process is capable of evolving new types of functional reactions. Neither is it capable of exciting or depressing functions that cannot be similarly affected, by artificial or natural means, in normal organisms.—DR. CARL J. WIGGERS, of Cleveland, in *J.A.M.A.*, Feb. 21, 1931.

The Etiology of Endemic Goiter

By E. O. Houde, M.D., Tacoma, Washington

CONTRARY to the generally received opinion that thyroid enlargement is the effect of a lack of iodine, endemic goiter, with the necessary element of time in chronicity, is the ultimate result of thyroid metaplasia, due primarily to a continuing chronic infection, essentially localized in the thyroid gland.

Characteristic microorganisms are invariably demonstrable, as gram-positive micrococci, in tissue sections, in the serum readily obtained from them and in the serous discharge which drains from the wound after goiter removal. By a specialized technic, these have been cultivated with regularity from many hundreds of specimens of every clinical variety of goiter, on the Pacific Coast¹, in Ohio², England³, France⁴ and, through the courtesy of Prof. de Quervain, from more than 100 specimens personally studied in Berne, Switzerland.

Proper inoculations of rabbits with these cocci induce thyroid disease in each instance, the organisms preferentially attacking the thyroids, from which they are recovered by the same original method.

Thus, subscribing in full to all of certain postulates, by which an organism is definitely proved and established as the cause of the disease from which it is cultivated, no scientific reason remains to doubt it as the ultimate factor causing this pandemic disease.

THE IODINE THEORY

The prevention of goiter by the administration of (excessive) iodine, has been clinically established through empiric expediency⁵, not as correcting an impossible absolute or relative iodine starvation. Always available and sufficiently absorbed by the blood stream, inorganic iodine is necessary "grist" to the thyroid "mill". Incompetency of this mill, when goitrous, is always induced and determined by the hitherto unknown, basic cause of goiter. Through nature's ubiquitous distribution of this element, more is available and actually assimilated everywhere, than even the most competent normal adult thyroid can utilize; and every goitrous thyroid is variably incompetent to synthesize it.

The average normal thyroid, as considered by Kendall⁶, shows a physiologically controlled capacity to produce and deliver 0.3 milligram of thyroxin daily, or approximately 120 milligrams per year; a maximal loss of one percent of which, involves but two micrograms of inorganic iodine per day, or less than one milligram per year. The average yearly intake, in non-endemic regions, varies between 12 milligrams, in New Zealand⁷, and 17 milligrams in Switzerland⁸. Intakes in endemic regions average 7 milligrams per year.

The most recent and comprehensive report, coming out of Norway, shows excretions of iodine, through kidneys alone, of from 56 to 125 milligrams, and that in a region with 70 percent goiter incidence⁹. So naturally excessive is iodine, for all normal and abnormal needs, everywhere, that kidney excretions are never free from it in a single instance, in massive statistics of record.

The undetermined normal loss of thyroidal iodine requires so very little inorganic iodine for replacement, that practically all of both low and high intakes is essentially eliminated through the kidneys, allowing a simple though inevitable deduction: The "unknown" cause of goiter has nothing in common with iodine, and its activating cause must be found through channels other than one related in any manner to inorganic elements, notwithstanding the important roles the latter do play when the cause is established, as it is in all goitrous glands.

All goitrous tissue has a contained relative paucity of stored organic iodine—the only form in which it can be stored. In lieu of the "unknown", this lack of finished products has been accused as the cause of thyroidal diseases, to the degree that current world literature, in discussing thyroidal hyperplasia as related to relative paucities of iodine compounds, inadvertently, to be sure, but nevertheless illogically, incriminates these deficits as the primary cause of pathologic changes.

The basic law of cause and effect is established in all sciences. The relationships existing between the cause of any disease and its sequellant defects brook no

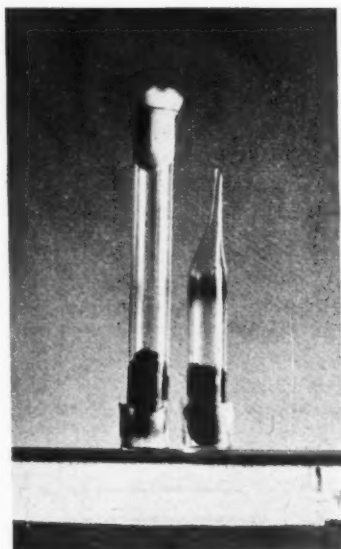


Fig. 1.— Left, Tube as Received from Operating Room; Right, Sealed Tube.

inversion at any stage of this or any other disease. All structural and physiologic perversions are sequelae to the primary cause of every pathologic condition. Whether a substance prevents, modifies or cures a disease, really militates little in favor of or against whatever theory may be popularly accepted about its cause; the latter has always been an etiologic problem, entirely detached from and beyond the compass of all related arts and sciences, except one, for its elucidation.

The key to the solution of the problem in this disease is a proper and necessary method for cultivating the microorganisms causing it, including satisfactory controls to settle the question of contamination. The lack of such a method accounts for the inability, hitherto, directly and positively to correlate the bacterial factor with the disease.

TECHNIC OF CULTURE

A section, or preferably several sections, from the goitrous tissue are transferred, in the operating room, directly from the patient's neck into each of several sterile test tubes; these tubes, promptly plugged with sterile gauze, are taken to the laboratory; the gauze is withdrawn, under proper flaming; the tubes are heated in a strong flame and drawn out, to make tis-

sue-containing, glass-sealed ampules, without heating the tissue (Fig. 1.).

Before glass-sealing the finished ampule, a few drops of tissue serum are obtained with a freshly-drawn, capillary tube and planted on agar culture medium and into broth. With the same serum, fixed slides are made for a direct microscopic examination, which invariably shows micrococci, in single coccus, diploid, or/and agglutinated clumps or ball forms. Primary inoculations of broth and agar and many experimental media, both aerobic and anaerobic, are invariably negative.

The sealed ampules are then incubated for a period of two, three or more days—an interval of time inversely proportionate to the quantity of contained tissue—after which a drop of tissue serum, inoculated on and into the media mentioned, reveals the "missing link" in the goiter question, as frank cultures of gram-positive micrococci. Fig. 1 shows a good working quantity of contained tissue.

CONCLUSIONS

- 1.—Endemic goiter is the result of thyroiditis.
- 2.—The iodine theory, *per se*, is completely repudiated.
- 3.—Effective iodine prophylaxis is accomplished by excessive intakes of that element.
- 4.—While variably modifying the course of the disease, inorganic elements, as variably ingested, cannot be primary factors.
- 5.—Bacteriology, the single science to elucidate, beyond question, the basic factors in all thoroughly understood pathologic states, scores again in the solution of the basic cause of thyroid disease.

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1111 Fidelity Bldg.

Newer Problems in Cancer and How to Meet Them*

By Joseph Colt Bloodgood, M.D., F.A.C.S., Baltimore, Md.

IN THE first place, I have no cure for cancer to announce. The only treatments for cancer today that are established are surgery and irradiation by x-rays and radium. Nor has there been discovered any differential stain for the cancer cell, nor any other method for its recognition, beyond the microscope and the x-rays. There is, as yet, no blood test for cancer, similar to the Wassermann test for syphilis or the metabolism test for toxic goiter. Nor are we any nearer, apparently, to the discovery of the exact cause of cancer, which might lead to a preventive or curative treatment, such as we now have for diphtheria. When all children receive the diphtheria toxin-antitoxin before three years of age, there is every reason to hope that diphtheria will be practically wiped off the face of the globe.

The most important problem in cancer today, for which we apparently have a fairly definite method of control, is the educational problem. We have sufficient evidence today, after seventeen years of trial, that correct information, provided it influences the individual to seek an examination at once, should increase the number of cures of cancer from less than ten percent to more than fifty or even sixty percent; and if this education is carried to its possible limitations, cancer of the skin and mouth certainly, and cancer of the cervix probably, will be placed among the preventable diseases.

Let us, therefore, briefly record what we know about the education of the people and the profession as a newer problem in cancer, beginning, in this country, in 1913, with the formation of the American Society for the Control of Cancer.

It is remarkable how slowly the medical profession realized that the control of cancer depended as much upon the education of the people as it did upon the education of itself.

In the past twenty years the standard of medical education has been improved almost up to its limits. No man or woman can enter a medical school without a pre-

medical training. Medical schools are standardized. The majority of graduates spend one or two years as hospital interns. This improvement of the medical school has been accomplished largely by the medical profession itself, through their representatives in the American Medical Association.

More recently there has been great improvement in the equipment, personnel and methods of the hospitals, brought about by the American College of Surgeons, with the financial aid of some of the philanthropic foundations.

No such effort by the American Medical Association, the American College of Surgeons or the medical profession itself has been made to give the people the correct information necessary for their protection against cancer, in spite of the fact that we now have the evidence that such an educational effort should increase the number of cures of cancer from ten to sixty percent.

INCREASE IN CANCER MORTALITY

The American Society for the Control of Cancer, formed by a small group of lay and professional individuals, started the educational effort in 1913. Through its labors, with the aid of individual members of the nursing, dental and medical professions and non-professional organizations, and the federal, state, county and city health departments, there is no doubt that the people of this country have received much correct information, and many lives, among the educated individuals, have been saved. But, up to the present time, federal and state mortality studies seem to indicate that deaths from cancer are on the increase. This increase cannot be explained by the fact of immigration, because the deaths from cancer among the immigrants during the first years is greater; nor by the fact that more people live to the cancer age, protected from preventable diseases by the discoveries of modern medicine; nor by better diagnosis. In spite, therefore, of the education, as far as it has gone; in spite of an increasing knowledge and the availability of the x-rays and radium;

*Address before the Alumni Association of the School of Medicine of Temple University, Philadelphia, June 18th, 1930.

notwithstanding the best surgery for cancer had been established by 1900; in spite of the fact that the percentage of well-trained physicians has largely increased in the past fifteen years; and notwithstanding the standardization of the majority of the hospitals, cancer deaths are on the increase.

It is the opinion of cancer students today that the most important newer problem in cancer is to explain this increase in cancer deaths. Why are some clinics in this country recording a decrease in the incidence of cancer from eighty percent, in 1900, to seventeen percent, in 1930, among the patients admitted to them, and improvement in the number of five-year cures from ten to sixty percent?

Dr. A. D. Bevan, professor of surgery at Rush Medical College, in Chicago, in his paper before the American Medical Association, in Detroit, in June, 1930 made the statement, in regard to definite improvement in diseases of the breast, that, from studies in his own clinic, the incidence of cancer is only thirty-three percent. The number of women who consult his clinic so quickly after the first warning is rapidly increasing, so that one-third of them require no operation at all; two-thirds have definite lumps; and in only one-half of these is the lump cancer.

Since 1925, in giving cancer clinics throughout this country, I have observed that the number of women coming to these advertised cancer clinics is tremendously on the increase, and the percentage of cancer is on the decrease. In spite of these signs of improvement in diseases of the breast, and also of the skin and mouth, it does not yet show in the cancer death rate.

Recent observations by cancer students, especially among the unprecedented numbers of hopeless recurrent cancer in patients who sought help because of the newspaper publicity given to the experimental work of Coffey and Humber in California, show that many of these individuals sought the advice of the medical profession in the earlier and more curable stages of cancer, and apparently received incomplete surgery, inadequate radiation, or surgery when there should have been radiation, or radiation when there should have been surgery.

Let us state briefly what seem to be the facts on which we can all agree: Cancer is on the increase. The educational efforts in some localities would indicate that it

should be on the decrease. Large numbers of individuals, correctly informed and seeking advice of the medical profession in the early stages, later come under observation of cancer students with hopeless recurrence, and the histories of their cases indicate faulty diagnosis, incomplete surgery, inadequate radiation. The profession is taking notice. The American College of Surgeons, through the influence of the American Society for the Control of Cancer, is attempting to organize, in general hospitals throughout this country, cancer clinics where the best diagnosis, x-ray, radium and surgical treatment can be obtained at once, and records kept of such a character that we will more quickly know the influence of such a reorganization, not only on recurrences, but on deaths from cancer.

In many of the state boards of health, cancer has been accepted as a public-health problem, and all health departments realize at least that they must help in the educational efforts. Massachusetts, through the representatives of the people in the state legislature, has practically ordered the commissioner of health and given him the funds, to attack the cancer problem from every possible standpoint. They have, in Massachusetts, a hospital for the diagnosis and treatment of apparently curable cancer and the care and comfort of hopeless cancer patients. Massachusetts is establishing and maintaining cancer clinics throughout the state. The medical profession is cooperating with the health departments in every way. New York state has had for years an institute for the study of the cause and cure of cancer, and, in addition, a diagnostic department, so that any member of the medical profession in the state of New York can send tissue there to be diagnosed by experts. This institute also has a large amount of radium and x-ray apparatus. There is no question, then, that efforts have been made in every possible direction in the attempt to control cancer which, in the past nine years, has so increased the death rate that it has taken second instead of eighth place in mortality statistics.

EDUCATION NECESSARY

To those who have given most attention to the cancer problem there seems to be but one conclusion—the most important problem, today, for the practical control of the

cancer death rate, is the organization of the press and all other agencies through which the medical profession can give the people correct information and influence them to consult the medical profession the moment they are warned, to select their family physicians while they are well and to join the increasing army of enlightened individuals who are seeking periodic examinations for their protection against disease. For the future we must establish systematic courses in the primary schools, on preventive medicine and the principles of good health.

It is essential that everyone should realize that this puts upon the medical profession increasing difficulties and larger responsibilities. The earlier the stage of the disease, the more difficult is it to recognize it by any of our present means. This is true of cancer.

Recently there appeared in the *New York Times* an editorial calling attention to the fact that the Ransdell bill had passed the Senate quietly and almost unnoticed in the noise and confusion of tariff and treaty debates. This Ransdell bill creates a new Institute of Health, under the control of the U. S. Public Health Service. This bill has now passed the House and has been signed by the President. Not enough people realize as yet that this legislation will make a historical epoch in the history of preventive medicine and medical research. The Jones-Parker bill, previously passed by Congress and signed by the President, creates a new personnel which will help the Surgeon General to carry out more efficiently the purposes of the Institute of Health.

Now there follows, logically, and at the opportune moment, a resolution and bill of Senator Harris, of Georgia authorizing the Surgeon General of the Public Health Service to make a cancer survey, and appropriating money for this purpose. It is hoped that this resolution will be adopted. We need the aid of the federal department of health to make this survey. We must find out why cancer is on the increase. We must study the educational problem and—perhaps most important of all—we must find out if the medical profession, in private offices and clinics, or in the hospitals, is properly and adequately equipped for the recognition and treatment of cancer in its early stages.

DIAGNOSIS IMPORTANT

I venture to suggest that the next more important problem in cancer is that of diagnosis. There was a time when cancer could be recognized, clinically, without the aid of the microscope or any other laboratory test. Velpeau, in 1840, wrote a fundamental book on tumors of the breast without the aid of the microscope. The greatest value of the microscope, beginning with Virchow's cellular pathology, was in the differentiation of the different types of the disease. Before the discovery of Koch's tubercle bacillus, before the Wassermann blood test for syphilis and before the invention of the microscope, tuberculosis, syphilis and malignant disease were differentiated largely by their clinical appearance or gross pathology, because the ignorant, uninformed individual came to the medical profession in the late and often hopeless stage of the disease. That day is practically over in any enlightened community in the civilized world today.

In 1915, from studies of breast tumors in the surgical-pathological laboratory of Johns Hopkins, which had been going on for twenty-five years, I felt convinced that we were registering as cancer, conditions and tumors of the breast that were not cancer. I could not find any cases that we had diagnosed *not cancer* when they really were cancer, and who returned later with, and finally died of cancer. But there were many instances in which cancer was diagnosed with the microscope, or which were suspicious of cancer, who, after being followed for five years or more, with a careful re-study of the microscopic sections, continued to live. In these cases, there was never any evidence of the disease except in the region of the tumor itself. When all of these cases were put together and taken out of the group of cancer of the breast without metastasis or involvement of the axillary glands, the five-year cures in the definite cancer were reduced from eighty-five to seventy percent.

I then gathered together the histories of these border-line breast tumors and submitted them to many pathologists throughout the country. In every single case there was disagreement as to the diagnosis of cancer or not cancer, varying from twenty to sixty percent in favor of cancer. Today, fifteen years later, this group has multiplied and multiplied. We now know that they

are not cancer, and need not receive the treatment for cancer. Nevertheless, this type of benign tumor or disease of the breast is still difficult to differentiate from cancer by the only means we have for differentiation—the microscopic section. It makes no difference whether this section is made fresh in the operating room or later.

When Mr. Francis P. Garvan, president of the Chemical Foundation, more than one year ago met my request for ten thousand dollars to build an additional research laboratory to the surgical-pathological laboratory of the Johns Hopkins Hospital and University, and to give us ten thousand dollars a year to search for a differential stain, I thought dreams really came true. This experimental research has now been going on under the charge of Dr. Charles F. Geschickter, who has made many valuable contributions to tumors of bone and who prepared himself for this research by four months' study in Europe. The color laboratory of the U. S. Department of Agriculture, through Dr. Holmes, is supplying us with all the dyes we need and aiding Dr. Geschickter in standardizing those we are testing. A differential stain has not been discovered, but Dr. Geschickter has developed two or more stains for fresh tissue, cut by the freezing method in the operating room, which, in my opinion, are much superior to all other stains up to date, and, in addition, have the great economic and teaching value of permanent stains. This makes it unnecessary to cut and stain sections twice. It allows us to teach longer and more readily from the tissues cut and stained in the operating room.

We have become so convinced that the diagnosis by the microscope, of tissues obtained in the operating room from patients who have come for an examination the moment they were warned, is becoming more and more difficult, that we have invited, with the aid of the American College of Surgeons, pathologists and surgical pathologists in charge of tissue diagnosis in the operating rooms of almost 2,000 standardized hospitals, to spend three days in Baltimore. The first two days are occupied in the actual microscopic study of sections of these border-line breast tumors that, in our opinion, are not cancer, but which many pathologists today diagnose as cancer. We hope to organize a number of groups of these members of the profession responsible for these microscopic

diagnoses, who will meet once or twice a year for actual microscopic, cooperative study and restudy, with the hope that ultimately we can learn how to recognize with the microscope more and more of these as not cancer, and thus save the patient from the possible mutilation of an unnecessary operation or irradiation.

What is true of the breast we find more and more true of the bone, and in the cervix and body of the uterus. Here the differential diagnosis saves the individual, if it is recognized as not cancer, an amputation, or when in the cervix or uterus, an unnecessary radiation or hysterectomy.

I feel that pathologists and surgical pathologists have been slow to recognize this border-line group, because they have not enlightened the people of their district and are therefore seeing late cancer, and the percentage of early cases is small.

NEED FOR A DIFFERENTIAL STAIN

This experience in our clinic urges us to the necessity of searching for a differential stain of the cancer cell, and we hope that we will be as fortunate as other research workers have been with other laboratory tests that make, today, the increasing possibilities of recognizing more and more diseases, either in the stage of prevention, or in one in which the possibility of a cure is best.

In the search for a differential stain, the Chemical Foundation has equipped, in the Carnegie Research Department, a new laboratory for the cultivation of the human cancer cell, and we hope that we will be as successful as other research workers have been in the cultivation of the normal and cancer cells of animals. Mr. and Mrs. Gey are in charge of this laboratory, under the supervision of Professor Warren Lewis, head of the department of cytology of the Carnegie Institute. Mr. and Mrs. Gey have had some four years' experience in the Columbia Hospital, in Milwaukee, in developing an intricate and painstaking technic and a proper culture medium for the growth of these cancer cells. So far, they have been able to keep the human cancer cells alive for only short periods, but cultures similar to those obtained from animal cells have not yet been successful.

Should we be able to cultivate the human cancer cell, we hope to employ it, not only in the search for a differential stain, but for further research in the more

obscure problems of the cause, prevention and cure of cancer.

In the Hunterian Laboratory of the Johns Hopkins University, Dr. Lee, of the department of surgery under Professor Dean Lewis, and Mr. Tilghman, a student of the medical school, are breeding a group of animals, with and without transplantable tumors, to aid further in the attempt to find a differential stain for the cancer cell. More than one hundred years ago, John Hunter was able to stain growing bone tissue by giving a dye by mouth. Dr. Geschickter has just confirmed this on a recent case.

We hope to influence all cancer students to aid in an organized search for a practical differential stain for cancer. It is a long, expensive undertaking to train men and women for the differential microscopic diagnosis of tissue obtained in the operating room, in order to tell cancer from the things that are not cancer, but this diagnosis must be made, and it should be made in every hospital throughout the civilized world. But there are not enough pathologists in the world to meet the demand. The profession and the people do not realize it, simply because, at the present time, the majority are ignorant of the first warnings and the danger of delay. Anyone can diagnose incurable cancer, but the earliest and most curable stages are still difficult to diagnose. The differential stain will be of tremendous economic value.

To repeat and to emphasize: The danger in the recognition of the early stage of cancer is not so much that cancer will be overlooked, but many lesions not cancer will be diagnosed cancer and receive unnecessary treatment. When it is a little spot like a mole or wart on the skin, or a small spot in the mouth, or an easily removed lump, it makes no difference whatever, because such areas, irrespective of whether they are cancer or not, should be completely removed if they do not disappear after irradiation. But when the lesion is in the bone or the breast, or the tumor is of such a size that its complete removal would be mutilating, the exact recognition

of lesions that are not cancer will save mutilation.

The last newer problems in cancer—the pure research for the exact cause, prevention and cure of this disease—I have no time to discuss. In my opinion, the search for the differential stain will lead to a readjustment of our efforts and a reorganization of our attacks.

CONCLUSIONS

There must be a cancer survey. We hope that the Harris resolution will pass and that General Cumming, of the Public Health Service, will be able to direct the survey with the aid of all other agencies interested. There is no question that the press is ready to do its part, and if the medical profession will do its part, the people will get the correct information better than in any other known way. The survey will allow us to find out whether diagnosis and treatment are really what they should be in the hospitals of this country, for the increasing number of people seeking an examination the moment they are warned. Research needs reorganization and stimulation.

We can feel satisfied that, up to the present time, in this country, we have made remarkable progress, but so far it has been in preparation only, because whether we have attacked the enemy or not, there is no evidence that we have made any impression. Never before have we been in the position we are in now for a uniform, organized, continuous attack on the part of the professions of medicine and journalism, and all other individual agencies which can help in protecting the people against disease.

Even Mr. Henry Ford was slow in recognizing that the old "Ford" needed replacement, and the new "Ford" demonstrates that this has been met. The medical profession must realize that our methods of teaching the public and ourselves about the diagnosis and treatment of cancer need change, and cancer research must take its proper place with cancer diagnosis and treatment.

904 N. Charles St.

Prevention of Puerperal Sepsis

(With Special Reference to the Vulvar Pad)

By William E. Ground, M.D., F.A.C.S., Superior, Wisconsin

AS WE read the medical literature, local, national or international, we find frequent reference made to the appalling morbidity and mortality from child-bed. What is more astounding is that this condition is growing worse instead of better. Much money and mental effort are being expended in an endeavor to clarify the situation, to find a solution and a remedy, but as yet nothing definite has been attained.

There has been too much meticulous laboratory study and too little generalized meditation on the situation as a whole; too great a tendency to saddle the entire problem on one germ or etiologic factor instead the ensemble—the elements of patient, physician, nurse and housing.

There is certainly no more important problem in preventative medicine than conserving the mothers, and any attempt along this line, however feeble, should command attention, whether it comes from the bacteriologist, the pathologist or the clinician. My experience on the clinical side, in one fair-sized community, covering a period of over thirty years in the practice of surgery, gynecology and obstetrics, should be worth something.

I have watched the development of antiseptic surgery from its inception and practiced its tenets to the best of my ability. Its changes and vicissitudes are known to all. Complicated and exaggerated systems have been discarded in favor of simpler methods, recognizing the fact that *within the patient herself lies the greatest factor to resist infection*, and thus relegating chemical antiseptics to a position of secondary importance.

In the meantime, the favorable results attained in obstetrics are not in keeping with those in general surgery. While prenatal care has improved, and puts a woman into the confinement chamber in better condition than formerly, here is apparently where the greatest danger commences. It is in the hospital that the menace lurks. I do not refer to the comparatively few well-regulated hospitals, but to the mass of hospitals and institutions where the lying-in period takes place. The pa-

tient is "prepared"—that is scrubbed, shaved and *nicked*, by a nurse, often one in training. True, many hospitals have an obstetric department, but it is on the same floor with all kinds of surgical and medical cases, with nurses and attendants running in and out of the delivery room at their pleasure.

Most physicians do not want to be called too soon. The nurse is instructed to call the obstetrician when needed, and then hold everything until he gets there, even to the extent of giving a little ether. Then everybody is in a hurry to get through; and here I might add that it is usually the patient's mother or husband who demands the most speed. The result is a precipitated labor, usually instrumental, with all the trauma that goes with it.

For a good many years my practice has been largely gynecologic, and in taking histories I have been surprised at the frequency with which women date their illness from the delivery of their first child. This should not be so; but what is the answer?

We should begin with some of the simpler things right under our noses. We should approach the parturient patient as a *surgical case*—not only come with clean hands ourselves, but require all attendants to do the same and to maintain aseptic discipline in the delivery room at all times. *The obstetrician should be in attendance or immediately accessible from the commencement of labor until its ultimate termination.* Repairs of the perineum and cervix should be made *at the time*. This should be done in a thorough and systematic manner, and should prevent many after-complications.

The preparation of the vulva and its after-care is largely my reason for writing this note. *I very much doubt the propriety of shaving the vulva.* It is of questionable utility and is certainly annoying to the patient, both at the time and after. Most women dread the shaving almost as much as they do the labor. If the physician feels that he must shave the vulva, he should do it himself, for not every nurse can do this without nicking the patient. I believe

it is better not to shave, but to clip the hair close and scrub the parts thoroughly with soap and sterile water, and rinse, if it fits one's fancy, with some mild antiseptic solution.

I express my strongest objection against the vulvar pad. I allow no such dressings on my obstetric patients, nor on any gynecologic patient who has had a perineal, vaginal or cervical operation. I cannot understand its popularity. Every one with whom I have talked about the subject, admits that it is bad; and yet it seems useless to try to stop it—or any other well established custom—in a hospital.

A sterile pad is placed between the woman's legs, well up against the vulva, including the anus. How long the pad remains sterile I leave to the imagination. The woman moves and turns about, wiping the material from the anus into the supposedly sterile, but wounded, macerated and blood-laden perineum, vulva, vagina and cervix. Can one imagine a more unsurgical situation or one more likely to breed infection? I had some bacteriologic studies made of pads, and they were all infected very soon; and it was not long before they were positively vile. But no bacteriologic study was needed. Common sense should teach us that.

In all the textbooks I have examined and the great amount of literature on the subject of puerperal infection that I have

gone through, I have found no word of caution in the use of, nor a suggestion of condemnation of the vulvar pad, but, on the contrary, its universal recommendation.

I do not mean to infer that the vulvar pad is responsible for all the puerperal infections; only that it might be a factor sometimes. This is, I think, sufficient reason for bringing the subject to the notice of the profession.

Since writing the foregoing, I have read a very interesting article on "Obstetric Sepsis, Its Prevention and Treatment," by Bethel Solomons, Master of the Rotunda Hospital, Dublin — *Lancet*, London, June 27, 1931. Among other things, he says, "If dressings are applied, they are inclined to shift to and from the anus, with consequent contamination. I have given up all dressings on the vulva at normal deliveries, and am satisfied that a cleaner labor results. Aseptic dressings around the vulva are more inclined to be a danger than a preventative."

This is the first serious intimation of the danger of the vulvar pad that I have encountered.

I have not permitted the use of these dressings for years, but it has required constant vigilance to keep them off. Some nurse, if not watched, would surely slip one on in an unguarded moment. But now, in the hospital where I do most of my work, I have no difficulty.

NARCOTICS IN OBSTETRICS AND GYNECOLOGY

There is no question in the minds of experienced observers that the routine administration of narcotics in labor, as demanded by hysterical magazine writers and as practiced by many overenthusiastic accoucheurs, has resulted in and is yet causing numerous deaths of new born children and also a certain number of maternal deaths. On the other hand there is a real and scientifically proved ground for the scientific administration of narcotics during labor.

The process of human childbirth is commonly pronounced to be a natural, harmless function; but accoucheurs know that, while this may have been the original intention of nature, the modern woman can seldom be brought through the ordeal without some physical damage to her body; that often she cannot be got through alive; and that frequently the shock to her nervous system leaves permanent injury. The pains of labor may be natural, but are they physiologic? Are they harmless? Everywhere else in the human organism, pain is a symptom of disease. At any rate, the modern woman cannot stand pain. It leaves its mark, and therefore it is the bounden duty of the obstetrician to reduce the suffering as much as possible within the limits of safety of mother and child.—DR. JOS. B. DE LEE, of Chicago, in *J.A.M.A.*, March 28, 1931.

Helping the Public to Understand

By J. R. Neal, M.D., Springfield, Ill.

President-Elect, Illinois State Medical Society

ONE of the most remarkable events in the history of America took place on June 14, 1671, at Sault Ste. Marie. There, in the presence of a multitude of Indians and in the depth of a boundless wilderness, a handful of French missionaries and adventurers took formal possession of the great Mississippi drainage basin, the heart of a continent.

Daumont De Saint-Lusson, moving spirit of the occasion and personal envoy of Louis XIV, informed the red men that henceforth they were dependent upon His Majesty, King of France; that they were to be controlled by his laws and to follow his customs.

In witness of these transformations a cedar cross bearing the arms of France was planted on a prominent knoll near the river. This was the symbol, not only of France and the white man, but of civilization and the best that humanity had achieved up to that time. It was expected that this symbol would command the respect, if not the reverence, of the savage people.

The Indians were deeply impressed. Scarcely had the ceremonies ended, however, when the arms of France were stolen from the cross. The metal was reduced to bullets for Indian guns. Instead of following the customs of Louis XIV, or of being controlled by his laws, the red men returned to their hunting grounds and their habitual customs. What faith they had in an all-powerful deity still reposed in the Great Spirit, in spite of French emphasis upon Christianity.

The white man was right, however,—wholly right! That land was to be his and the ways of the red man would change. The Indian probably recognized in this strange, resourceful creature a superior being. But the habits built up through a thousand years could not easily be cast by the wayside. The faith and traditions handed down from antiquity, ancient as the race itself, could not be dispelled in a moment. It was still less than 100 years since the white man had come to that part of America to stay. A wounded chief,

with his splendid intelligence, might accept the medical skill of a French or English doctor, but he secretly prayed to the Great Spirit and added the charms of the medicine man from his own tribe, just to be safe.

Ultimately many Indians did adopt the customs of the white man and came to respect his laws. These have risen to the highest levels of civilization. A vice-president of the United States and a humorist of international renown bear witness of this fact. The process was slow, however, and began with the education of children. Even now, the wigwam and the tepee have a certain following among those who have not been reached by careful educational methods.

Substitute the modern medical profession for the handful of French adventurers; let the public take the place of the Indians; and call scientific medicine the white man's laws and customs, and we have, in 1931, an almost perfect reproduction of the scene enacted on the 14th of June, 1671, at Sault Ste. Marie.

Scientific medicine, as we understand it today, is a very youthful development. Bacterial life and its relation to disease was discovered less than 100 years ago. Anesthesia has not yet celebrated its hundredth anniversary. The practice of faith healing, on the other hand, and of strange manipulations of the body, of invoking charms and of mixing the extracts of roots and herbs, is as old as history itself. The idea that sickness originates from mysterious sources and that occult powers, aided and abetted by incantations, is required to deal with it, harks back to the very earliest times.

Entrenched as they are in the very marrow of the race, these ancient traditions and superstitions will not be easily displaced. It is a difficult task even for the schools to do the job, because the influence of parents frequently overbalances that of the teacher in such matters.

This point is illustrated by the attitude of a prominent surgeon in Springfield toward yellow flowers. He absolutely forbids them to be kept in the room of any patient of his. This innocuous practice might

*Delivered before the Medical Round Table of Chicago, Oct. 13, 1931.

be characterized as a personality trait or a deliberate attempt at eccentricity, but it is founded upon superstition which four years in a medical college and a wide practice has not been able wholly to eradicate.

It seems somewhat ludicrous, therefore, to hear intelligent physicians assailing the public and the legislatures for tolerating charlatans, nostrums and fakers in the medical world. No movement ever succeeded by a policy of high-handed intolerance of unworthy competition. No sect or cult was ever smothered by legislative fiat or intolerant denunciation.

It may be held that the great ease with which people may have knowledge today ought to counterbalance the influences of tradition and ancient customs; but the channels which are now open to the spread of scientific, rational information are open likewise to the dissemination of cultism and superstition. Furthermore, specialism has robbed individuals of the ability to keep well informed of the intricacies of any but their own fields. The physician who keeps well posted on developments in the medical world has little time to become an expert on stocks and bonds. Numerous illustrations show how narrow specialism has come to be.

The situation is the same in other lines of endeavor. Keeping abreast of the times in their own particular industries or professions absorbs practically all of the energy and time of the great majority of people. For services from other fields they must depend upon the specialist in that field. When in need, they call upon the craft in which their confidence has been established by education.

The merit or scientific accuracy of principle upon which a specialty is based is rarely the determining factor in popular choice. Ideas are like sparks from a locomotive. Thousands of sparks fall upon the fields along the right-of-way, but only rarely does one kindle a fire. It must fall in exactly the right place at exactly the right time in order to start a flame. It so happens that, right now in the history of civilization, the chances of acceptance of sound ideas are far greater than at any previous time.

In the medical world, for example, malaria was attributed to mosquitoes as early as the fifth century A.D. Garrison points out that Susruta wrote a very recogniz-

able description of malaria and named the mosquito as the source of the disease. The idea was so preposterous, in the minds of others at that time, that it gained no currency. That spark was more than a thousand years too soon to start a fire. Children then were taught that sickness came as a punishment for sins. That a mere insect should be held responsible for the sickness of man whose image was like that of God himself was too radical to warrant serious thought.

Even as late as 1848, society was not ready for the theory that insects and germs are factors in the spread of disease. In that year, Nott, of South Carolina, suggested the mosquito theory in reference to the transmission of yellow fever but civilization had to wait another half-century before it was prepared to profit by such an idea. Even the monumental work of Pasteur was not accepted with instantaneous and universal enthusiasm. This point is illustrated by the attitude of Henry Bixby Hemenway, an Illinois physician of splendid education, who was identified with public health work in this state for twenty years, until his death last winter. He was travelling in Europe to benefit his medical education, at the time Pasteur was active in Paris. So little had the news of Pasteur's work impressed him, that he spent a week-end in idleness in London while the great Frenchman was conducting one of his celebrated clinics at the Academy of Medicine in Paris. While the memory of this experience became a source of outstanding remorse in the life of Hemenway, it illustrates the profound influence of training and tradition upon the attitude of intelligent people toward life.

The very principles upon which scientific medicine rests today are quite new, from a historical point of view. The medical profession has developed at far too rapid a pace to permit the public to keep up with the procession. A particularly significant illustration of this fact occurred not long ago in Springfield.

A movement to immunize children against diphtheria with toxin-antitoxin was started. The wife of a prominent business man of the city was approached concerning her small son. She is a college-bred woman and of more than average intelligence. Her emphatic reply was: "None of that poison will ever be injected into the pure blood of my boy."

A similar situation arose in Bloomington, Illinois. The city superintendent of schools voiced the sentiment of an audience one night when he vigorously objected to the modest appraisal given to that city by a representative of the State Department of Public Health, for the health work being done. To test the validity of his objections a state official asked:

"How many children in Bloomington were protected against diphtheria last year with toxin-antitoxin?"

"Every case!" was the superintendent's prompt and emphatic reply, honest but erroneous.

Here was manifested, in high-grade citizens, an almost complete ignorance of the principles upon which immunology rests. That artificial immunization is nothing more nor less than timing advantageously a perfectly natural process had never occurred to this mother; while the superintendent of schools was not aware of any difference between the functions of a curative and a preventive biologic product. Both of these events took place within the last five years.

With this view of the situation, it is pertinent to inquire into the educational activities of the medical profession. What has been done to establish scientific medicine as the only reliable, rational system for combatting disease?

Efforts in this direction are practically limited to the last fifty years. They have proceeded along two very definite lines. The older of these two is legislative in character and includes the licensure of physicians and the police powers of health departments. Much more recent is the strictly educational phase of these activities.

Most official public health service in the United States began as a result of a demand from the organized medical profession. The dominant idea behind this movement seems to have been that the elimination by law of unqualified practitioners would practically solve the medical and public health problems. Having been instrumental in creating state boards of health for that purpose, the medical profession assumed the all-too-common attitude that that job had been completed.

Licensure of physicians and the development of high medical education standards hastened the growth of legalized cultism. Licensure, therefore, changed the line

of attack only. It added tremendously to the prestige of scientific medicine, but it fell far short of changing the habits of a multitude of people.

Once created, the state boards of health recognized that the education of the public in medical matters offered far more promising results in behalf of scientific medicine and in public benefit than did the execution of registration laws and the attempt to legislate cultism out of existence.

Unfortunately, the federal, state and city public health officials have not always enjoyed the support and endorsement of the medical profession which the potential possibilities of official public health service warrant. This is illustrated by the experience of Massachusetts in a public cancer program. Without any enthusiasm from the medical profession, the State Department of Public Health undertook to carry out the provisions of a law enacted by the legislature. The program included the establishment of public cancer clinics throughout the state and an intensive campaign to stimulate attendance. A careful canvass of the physicians after the campaign indicated that 22 patients went to see doctors in their private offices for each patient who attended the public clinics.

It is conceivable that a close and active coordination between the official health agencies and the organized medical profession would bring into play one of the most powerful educational movements in the country. The very fact that public health work has come to be regarded as a profession, distinct from the medical profession, and that the two hold independent conventions in most states and publish independent journals, is evidence enough that cooperative union is by no means complete. It is probably not too much to say that the medical profession in general has left the public health movement alone to work out its own salvation.

The direct lay educational work undertaken by organized medicine is a very new project. The contact established between the American Medical Association and the American Education Association is probably the most fundamental of all particular efforts in this direction. Fruits of this effort are still immature. Physicians who deplore the inroads of cults and the lack of appreciation of scientific medicine could do no better than to give every encouragement to that project.

Within the past five years, the American Medical Association started the publication of *Hygeia*. This is a very commendable magazine. Its readers, however, are very largely people who already believe in scientific medicine and have no need of conversion. Furthermore, the audience reached seems diminutive indeed, compared with that secured by the purveyors of yeast and listerine.

Very recently, medical associations have begun to utilize the radio, but the medical broadcasts which command the best time schedules are not always given by organized medicine. Dr. Haggard's popular addresses are sponsored by the Eastman Kodak Company.

Some of the state medical societies have recently organized popular educational movements which are doing splendid, if limited, work. Foremost among these is the Illinois State Medical Society. Through a speakers' bureau and a newspaper service, very commendable educational work has been accomplished. Here again the magnitude of these efforts is diminutive in comparison with campaigns of education undertaken by the vendors of nostrums and health foods.

When the situation is thoroughly canvassed, it seems that the scientific medical profession enjoys a public confidence and esteem far beyond what might be expected from the amount of educational effort put forth. While the federal and state governments have been compelled to recognize cultism in one way or another, military medicine and public health service have been kept upon a high ethical plane. Possibilities in that direction were very impressively demonstrated last summer when Governor Murray, of Oklahoma, threatened to dismiss the entire faculty of the University Medical College when a chiropractor, whom he designated to attend a patient, was refused the facilities of the University Hospital. So far, no federal or state funds have been appropriated for the maintenance or development of osteopathic or chiropractic schools, but money from both sources has been authorized for use in paying the expenses of pupils in these schools.

Probably the most important and, at the same time, the most neglected point of contact for achieving educational results is the state normal colleges. Here the teachers who get hold of the children in the primary grades are trained. Until very recently, no attempt to give pupils any comprehensive conception of scientific medicine was made in the five Illinois state normal colleges. During the past five years the State Department of Public Health has made a vigorous attempt to have incorporated in the curriculums of these colleges courses in public health and preventive medicine. These efforts have been only partially successful.

A teaching project in the normal colleges is worthy of the best efforts by the American Medical Association and of all of its component societies. A movement to that end, in which the Illinois State Medical Society and the State Department of Public Health were solidly united, would be difficult to stem. It would be a distinct public service and of immeasurable importance to scientific medicine if the medical profession succeeded in establishing a genuine course of instruction in the teacher-training colleges and saw to it that qualified teachers were employed to do the work.

The medical profession has recognized the importance of education. It has erred, however, in the method of enlightening the public. Most of its efforts have been expended along legislative lines. That way brings the quickest but the least returns. It operates well among people who can choose wisely between the bona fide and the false. More than one-half of our population has never been to high school. For these, the influence of racial practice and belief is important. Traditions and customs as old as history are replaced in the public mind with the greatest of difficulty. To do it one must begin with the child. Louis XIV could not sit upon his throne in Paris and transform by edict the customs and habits of a savage people 3000 miles away.

Spring at Monroe St.

Milk as a Source of Vitamins

By James A. Tobey, M.S., Dr. P.H., New York City*

LONG before the discovery of those elusive food substances now known as vitamins, milk was recognized as possessing unusual nutritive virtues. Many centuries ago the famous Greek physician, Aretaeus, epitomized the value of milk in these words, "To take milk is pleasant; to drink it is easy; it contains solid nutrition and it is of all foods the one which is most familiar from childhood; it is even pleasing to the sight on account of its whiteness."

The qualities in milk which elicited paeans of praise from such ancient authorities as Hippocrates, Pliny, Aristotle and Plutarch, as well as Aretaeus, have since been recognized as a rare combination of easily assimilable fat, protein, carbohydrate and minerals, particularly calcium and phosphorus. To these important chemicals may be added an abundance of certain vitamins and a fair supply of certain others.

No other food contains such an effective grouping of essential dietary elements. Pure milk is consequently recognized as an indispensable food, as the one almost perfect human aliment. Only its bulk, with a normal water content averaging 87 percent, its tendency to sour rather quickly, and its relatively low quantity of iron prevent milk from being appropriately characterized as the "perfect food". Even so, it is the ideal sustenance of growth and development and for the promotion and maintenance of health and virility.

MILK AND THE DISCOVERY OF THE VITAMINS

The vitamins might have been discovered a quarter of a century sooner than they were if certain suggestive experiments on milk had received the attention they deserved. As early as 1881, a German investigator named Lunin observed that laboratory animals lived for several months on a diet of whole milk, but succumbed quickly when fed a combination of purified constituents of milk, including the fat, protein, sugar and carbohydrates. As a result of this work, Lunin suggested that

milk must contain some other substances indispensable to nutrition.

This clue went unheeded, although ten years later it was confirmed by another German investigator, named Socin. About this time Dr. Eijkman began, in Java, his famous experiments on beriberi, in which he demonstrated that there was an essential food substance in the branny coat of unpolished rice. Eijkman's report, in 1897, was followed by the work of Funk, in 1911, which paved the way for the discovery of vitamin B by McCollum and Davis, in 1915¹.

Both vitamin A and vitamin B were found as the result of work on milk. In 1906 Dr. F. Gowland Hopkins, in England, noticed that experimental animals failed to thrive on purified diets of casein, lard, starch, cane sugar and mineral salts, but that the addition of small amounts of milk to this fare immediately converted it into a satisfactory diet. From this work Hopkins, like Lunin, concluded that milk must contain some substance essential to growth and good health.

From two American laboratories came almost simultaneous announcements, in 1913, of a fat-soluble "vitamin", found to exist in butter fat and egg yolk, but absent in lard and common vegetable fats. Following this pronouncement by Osborne and Mendel, and by McCollum and Davis, the two latter investigators announced, two years later, the discovery of a water-soluble "vitamin" which was also found by means of experiments on a constituent of milk. McCollum and his co-worker added milk sugar to a diet of polished rice and ascertained that growth resulted if the lactose were insufficiently purified. The accessory food substance was contained in the water from which the milk sugar was crystallized and was identical with Funk's substance, to which he had assigned the name "vitamine", or life-giving amine.

Vitamin D was differentiated from vitamin A in 1921, as the result of experiments on butter fat and cod-liver oil, carried out by a number of investigators; while vitamin C was discovered by Drummond in 1920. Evans demonstrated the existence of vitamin E in 1923, and vitamin B was

*Dr. Tobey is co-author with S. J. Crumbine, M.D., of the book on milk entitled "The Most Nearly Perfect Food," published by Williams & Wilkins Company, Baltimore, Md.

shown to have two fractions, by Goldberger and others, a few years ago.

THE VITAMINS IN MILK

Since milk was so closely involved in the actual discovery of the vitamins, it would logically follow that this lacteal secretion is a potent source of some or all of the six whose characteristics are now well established. Many scientific experiments have proven that milk is abundantly supplied with some of these vitamins, but that its content of others, while generally good, is somewhat variable.

The fat of milk is one of the three or four best sources of vitamin A. Only cod-liver oil and some other fish oils, and egg yolk exceed it in this respect. Because of its great significance to growth, general good health, fertility, longevity, and the development of resistance to disease, particularly the respiratory infections, vitamin A is in some respects the most important of all the vitamins. Experiments by Sherman have indicated that the body has the power to store this vitamin as an efficient reserve for future needs².

The physiologic influence of vitamin A has been demonstrated by an interesting series of animal feeding experiments in Professor Sherman's laboratory at Columbia University in New York. More than 25 generations of experimental animals have been raised on diets consisting exclusively of powdered whole milk and powdered whole wheat, with a little salt and plenty of distilled water.

A proportion of one-sixth milk powder and five-sixths whole wheat has been found to yield a diet adequate for growth, reproduction and the successful rearing of the young. When, however, the proportion of milk is doubled, so that it makes up one-third of the diet, this adequate diet is converted into an optimal one, with resulting increases of health, fertility, disease resistance and longevity.

Adding more milk also adds years to life. Results with over 400 laboratory animals have shown that a ten percent increase in the span of life has been thus achieved. There also occurs a definite improvement in fertility, the prime of life beginning earlier and extending over a longer period³. If an experiment such as this were conducted on human beings, it would require a period of 600 years. This laboratory test can, moreover, be translated into human terms and is a notable

contribution to nutritional science, demonstrating the vast significance of vitamin A and of milk as a suitable source of it.

With respect to the vitamin B complex, milk is an excellent source of the fraction now known as vitamin G, which promotes growth and prevents pellagra, while it is a fair source of the other fraction, called vitamin B₁, which also promotes growth and averts beriberi.

"Unanimity of opinion that milk is of high pellagra-preventive value," says the report of the Committee on Nutritional Problems of the American Public Health Association⁴, "is equally consistent with any of the nutritional theories, because milk contains all of the nutritionally essential factors and is an outstandingly valuable source of all of them." Skimmed milk is, incidentally, as rich as whole milk in this vitamin and is an effective anti-pellagra food.

The content of vitamin C, the anti-scorbutic, in milk, varies somewhat, according to the care and feeding of the cattle. Milk from cows fed on summer pasturage is generally richer in antiscorbutic properties than that from those which are stall-fed during the winter months. As pointed out by MacLeod, however, milk from stall-fed cows which are fed a well-balanced, uniform ration throughout the year will not show a seasonal variation and will protect against scurvy⁵. Since vitamin C is easily obtainable in the diet from fruits and certain vegetables, any deficiency of it in milk is not of great practical importance.

Milk contains vitamin D, the antirachitic, but is not abundant in it. Butter, on the other hand, is a good source of this vitamin, although not so rich in it as is cod-liver oil or egg yolk. The quantity of vitamin D in cow's milk can be influenced by the ration of the cattle and may be increased by the use of certain irradiated feeds⁶.

Vitamin E, the antisterility substance, is present in milk, but is of little practical importance, so far as is known at present. It is probable that there are other vitamins in milk, as yet undiscovered.

INCREASING VITAMINS IN MILK

Much attention has been given in recent years to the possibility of increasing the vitamin content of milk as it comes from the cow. Since vitamins A and G are satisfactory, this work has been devoted chiefly

to vitamins B, C, and D. The problem in connection with vitamin C is, as already indicated, a simple one and requires only a more scientific diet. At the Walker-Gordon farm, at Plainsboro, N. J., where dehydrated summer feed is employed throughout the year, this certified raw milk is uniformly well supplied with the antiscorbutic vitamin at all times.

An increase in the vitamin D content of milk has been attempted by irradiation of the cattle, but without demonstrable results on cows, although goat's milk can be improved by irradiation of the animals.⁷ Milk itself has been successfully irradiated, with the development of excellent antirachitic properties.⁸ The use of irradiated yeast in the ration of the cow seems at present to be the most effective means of increasing the vitamin D content of the milk.⁹

VITAMINS IN PROCESSED MILKS

Because of the ease with which it may be contaminated with bacteria, both harmless and dangerous, about half of our market milk is now pasteurized, and sanitarians advocate that all milk, except possibly certified, ought to be so treated, as a public health measure. Pasteurization consists of heating every particle of milk to a temperature of from 143° to 145° F. and holding it at that temperature for thirty minutes, after which it is rapidly cooled.

Innumerable studies on the effect of pasteurization on the vitamin content of milk have shown that the only result of the process is a slight reduction of vitamin C. All of the other vitamins are thermostable and are practically unaffected by this moderate heating. Properly pasteurized milk may be considered as the practical equivalent of raw milk, from the nutritional standpoint, besides having the added virtues of safety and a slightly increased digestibility.

A number of other processed milks are now widely distributed. These include the condensed, evaporated, powdered and malted milks, in all of which some or nearly all of the normal water has been extracted by means of a careful heating process. Evaporated and powdered milks have nothing added to them, but condensed milk is preserved with cane sugar, and malted milk is a processed combination of milk, barley malt and whole wheat, reduced to powdered form.

The principal effect of the manufacturing methods on the biologic properties of these concentrated milks is a diminution in vitamin C, varying from a comparatively slight reduction, in condensed and dried milks, to complete destruction in evaporated milk. Since milk is not depended upon for an abundant supply of this particular vitamin, this loss is not of great practical significance.

The other vitamins in these forms of milk are relatively unaffected, although there is apparently a slight diminution of vitamin B₁ in evaporated milk. These concentrated milks may be used with full confidence in their essential nutritional properties. They also have the advantages of superior digestibility, convenience, excellent keeping qualities, bacteriologic safety and comparatively low cost.¹⁰

In the light of modern nutrition, pure milk in any form is unsurpassed as a food-stuff. Containing nearly all of the elements needed to sustain life and to nourish the human body, it is an almost complete food. The science of nutrition recognizes that a well-balanced and adequate diet must be constructed around a proper supply of energy nutrients, minerals, fluids and vitamins, with palatability as an added asset. Milk fulfils all of these specifications more satisfactorily than does any other known food substance. It deserves its present popularity in dietetics and ought, indeed, to be our national drink.

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350 Madison Ave.

Early Diagnosis of Neurosyphilis*

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THE study of case histories is always interesting and is frequently enlightening to a great degree. When combined with a personal study of the condition and progress of the patients themselves, it becomes one of the most important sources of the knowledge which must be used by the physician in his treatment of disease. The study of records of neurosyphilitic patients is no exception to this rule, and much can be learned from a careful perusal of histories and clinical records of patients who have this disease.

One important fact which one notices on such perusal is that neurosyphilis belongs to that class of diseases which must be thoroughly treated early in their courses in order to obtain gratifying results. The current medical literature contains many reports of cases of neurosyphilis in which treatment has been followed by marked clinical improvement, but far smaller is the number of case reports in which the patients have been restored to a condition as good or essentially as good as that they enjoyed before the onset of the disease. The reason for this fact is obvious; namely, that the destructive process must be arrested before complete degeneration of nerve tissue occurs, if recovery is to be complete. The absence of the neurilemma in the central nervous system structure prevents regeneration of destroyed fibers, even if the nerve cell is intact; and if the latter is destroyed, the single centrosome of the nerve cell prevents its reproduction with consequent restoration of function, though some functional restoration is possibly made by vicarious action of groups of cells elsewhere in the nervous system.

Study of many case of neurosyphilis and study of literature on the subject strongly impresses one with the fact that, in the majority of cases in which the clinical condition has apparently improved to such an extent that the patient is considered normal, the treatment has been intensively given, shortly after the onset of the disease.

EARLY SEROLOGIC REACTIONS

Two hundred four (204) cases of neuro-

syphilis have been studied, with special reference to the serologic reactions and clinical findings at the onset of the disease and to the progress of the patient. This is, at present, a vital study in this hospital, in that practically every patient in the group who is still in an institution is here under active treatment. In these cases it was found that 113 had had a positive blood Wasserman or Kahn reaction, and 10 had had a negative blood reaction prior to or within a short time after the onset. Ninety-two (92) had a positive spinal fluid reaction within the same period. No negative spinal fluids were on record in this group. The total number who had had positive spinal fluid or blood or both, in the entire group, was 133. The reason that this figure is smaller than the sum of the other two being that, in many cases, the same patient had both positive blood and positive spinal fluid.

EARLY CLINICAL FINDINGS

The earliest changes noted by the associates of the 204 patients were considerably varied. The symptom complex which is given the lay term of "nervousness," but which is, perhaps, better described by the term "mental and emotional instability" occurred first in the greatest number (39) of cases. Partial amnesia was the first symptom to occur in 28 cases. Unusual irritability and indifference appeared next most frequently, each in 22 cases. Abnormal behavior, of which seclusiveness was the most frequently appearing type, occurred in 21 cases. Judgment defects were first noted in 19 cases, and delusions in 18. Symptoms of cerebral hemorrhage were first to cause concern as to the patient's condition in 16 cases, while those which appeared first in other cases were: physical weakness in 9; mental confusion, grandiosity and loss of vision, each in 8; lancinating pains in 7; hallucinations in 6; vertigo and dysarthria, each in 5; tremors in 3; formication in 2; and diplopia and aphonia, each in 1 case. In 17 of the entire group of cases no record was available as to the character of the symptoms at onset.

Records of the neurologic condition at the time of the appearance of the first mental symptoms in 164 of the entire group

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of cases were kept and are available. Diminished pupillary response to light was present in 77 cases; dysarthria in 36; decrease in activity of deep reflexes in 31 cases, and an increase in 34; tremors of tongue, fingers or lips in 29 cases; hemiplegia in 14 (equally divided between left and right sides as to number of cases showing this symptom); optic atrophy in 11; positive Romberg sign in 9; muscular incoordination in 7; decreased superficial reflexes in 4; formication in 2; while anesthetic areas, positive Babinski's sign and ankle clonus were present in 1 case each. In 10 cases the neurologic examination, at the time of the onset, was negative.

PROGNOSIS IN NEUROSYPHILIS

From the case records it was seen that the first mental symptoms to appear were, in many cases, present in mild degree and were such as would not greatly incapacitate the patient nor seriously interfere with his normal position in the home, community or state. Of the 204 patients involved in this study, 15 are dead and 75 percent of the remainder are in such mental condition that any reasonable estimate of the number who will probably yet be able to go out and take their places in the world, would not cover more than 50 patients.

The average period of the time between onset and the beginning of intensive treatment, in these 204 cases, was 2.87 years. In a special study made of 120 of this group of cases, which was recently reported, it was found that the average period of time between the onset of symptoms and the beginning of intensive treatment, in the groups of patients showing improvement in clinical condition and in serologic reactions, was 2.4 years; and, in the group of patients showing a stationary or slightly regressive condition, the interval mentioned was 4.2 years.

INDICATIONS FOR SEROLOGIC TESTS

Careful consideration of the situation causes one to feel that any marked mental aberration in a patient is a possible indication for serologic tests, even in the absence of a syphilitic history; while the slightest suspicion of a personality change in one with a positive history of syphilis, is a very definite indication for blood and spinal fluid tests. If complete examination reveals neurologic changes, this indication is, of course, much stronger in either case. True enough, if this procedure is followed, many of the cases showing such mental aberration will be found to have negative serologic reactions, and some of those with positive blood reactions will possibly develop types of psychosis other than those of neurosyphilis, but one may safely assume that if the blood and spinal fluid are examined in all cases in which there are signs or symptoms of neurosyphilis, at least some early cases of this disease will be discovered and, if treatment is given early and intensively, some patients who would otherwise have gone on to the more advanced stages of this disease will be kept in the ranks of our nation's workers.

CONCLUSIONS

This series of cases indicates that, in the vast majority of cases, at the time the first symptoms of neurosyphilis appear, neurologic findings are present which help to confirm a diagnosis of this disease.

In making a diagnosis of neurosyphilis in its early stages, a physician is aided by the fact that many patients with this disease have positive blood Wassermann and Kahn reactions. Yet he must not consider neurosyphilis ruled out by negative blood reactions, since 4.8 percent of this group of patients had negative blood Wassermann or Kahn reactions, at or near the time of onset.

GAMES

Even in the life of the family the harmonizing influences of games is seen. The friction sometimes exhibited among its members, in some cases taking the extreme form of nagging, wrangling and quarreling, is, no doubt, due in large part to the fatigue of the higher brain. In such cases it will often be found that participation in some simple game, particularly an outdoor game, such as golf, tennis, or even quoits, will completely relieve the situation, bringing sympathy, harmony, and peace.
—DR. G. T. W. PATRICK, in "Psychology of Relaxation."

A Simple Method of Outlining the Heart

By J. S. Lankford, M.D., San Antonio, Tex.

ACCURATE knowledge of the size, shape and position of the heart is extremely important in diagnosis and prognosis and in watching the results of treatment. The old method of superficial and deep percussion, using the fingers, or the fingers supplemented by instruments, is reasonably accurate, but it has a number of difficulties. When the chest wall is very thick or fat there is too much dullness or solidity in the tone elicited; when extremely thin it is hard to percuss in a way to obtain an accurate tone. In some cases it is a difficult matter to trace a perfect outline in this way. If some method can be devised and rendered more applicable to every case and more dependable, it will be a great advantage and will save considerable cost to the patient.

Of course roentgenography is the best method, as was demonstrated long ago and confirmed by numerous experts. It will clearly outline the heart and reveal at once pathologic conditions of the other organs and structures of the chest. But the x-rays are not available to all patients. In the great cities, the free clinics are open to all classes in all seasons, and those who cannot afford the x-ray examination in private offices and clinics can get adequate service without pay. But this is not so everywhere. In country districts, villages, towns, and even in many cities, provision has not been made for the great middle class of salaried men and women and of wage earners, all of whom must economize and cannot afford the use of instruments of precision like the x-rays, or even the electrocardiograph or sphygmotonomograph. A simple but satisfactory method of outlining the heart, therefore, must be a great saving to a large class of patients.

Man is conscious of his environment through the law of vibration; taste, smell, the sense of touch and, particularly, vision and hearing, are all a question of the laws of vibration and receiving sets. The center of hearing in the side of the brain brings us, by vibration, every sound, every word and every tone of music from all instruments.

The skin is a great receiving organ for vibrations, but it is also a most remarkable

vibratory organ. It has tension, like a drum, the resilience of rubber and great flexibility, and is easily thrown into a vibratory state. Pottenger's sign in the examination of the lungs is valuable mainly on account of the vibratory quality of the skin. A blind man is conscious of everything around him, including obstacles in the way, through his sensitive, vibratory skin.

Twenty years ago, realizing these qualities of vibration of the skin and desiring to devise some method by which the expenses of the poor and middle-class might be reduced and, at the same time, adequate service rendered, many efforts of different kinds were made in testing skin vibration and auscultation combined.

It was first thought that some adhesive material could be used successfully—something to lift the skin and release it quickly, to throw it into vibration. But the human skin was found too variable in different cases. What would stick and let loose promptly and create vibration in one case, would not do it in another. There was too much variation in smoothness, roughness, dryness, moisture and oiliness. On account of the many difficulties this plan was abandoned. Efforts were then made, by strokes near the border line of the heart, using all kinds of pleximeters and hammers along the lines of the old method of a finger for a pleximeter and another finger for a hammer, or using varying pleximeters and percussion hammers. Even the tuning fork was tried, but without success.

PERCUSSION AND AUSCULTATION

After much experimentation, in many ways, an excellent method was finally worked out, combining percussion and auscultation. Cammans' metal stethoscope is placed, with some firmness, in mid sternum, between the second ribs. With an ordinary rubber-head lead pencil, grasped about the middle between the thumb and first two fingers and held vertically, eraser down, the skin is struck a series of medium-firm, quick strokes and quickly released, about four to the second, beginning two or three inches outside the supposed margin of the heart and moving

toward that organ, each stroke falling upon the skin one-half to one inch nearer the probable border. Precaution must be taken to strike quickly, releasing the skin promptly, thus throwing it into vibration. The pencil need not be raised more than one or two inches from the chest.

Immediately upon approaching the cardiac line, the percussion note becomes dull or flat. Here a mark is made and the procedure is repeated on the other side. The stethoscope is then moved down to the same point between the third ribs and the border found; then between the fourth ribs and the fifth, where the line is discovered in the same way. Quickly the pencil marks are converted into a continuous line and the outline is complete. It can be done in one minute. The female breast, of whatever thickness, does not interfere with the test.

If there is any suspicion about increased liver area and dullness complicating the test, percussion from above downward and from below upward, inside the nipple line, will reveal the liver border. It should be remembered also that enlargement of the spleen and pleuritic effusion may complicate matters. Pericardial effusion can be easily outlined by this plan, but pleuritic effusion is more difficult, because it is usually too far from that excellent sounding board, the sternum. Extensive consolidation of lung tissue, mediastinal tumor and other pathologic conditions may seriously interfere with the accuracy of this test and x-ray examination may be imperative. And still, since this plan was adopted fifteen or eighteen years ago, dextrocardia has been readily recognized. It can be used very satisfactorily in outlining the dilated

aorta and in ascertaining the size of an aneurism.

It is well to remember that, if the chest is very bony, it is best to keep to the skin in the interspaces of the ribs. Vibration is readily carried along the ribs to the sternum and thus from the sternum to the stethoscope, but the percussion note is more sonorous when transmitted by bone, and less accurate in results. The skin does not vibrate well when stretched tight over bone and, therefore, if the strokes are first over the bone, then in the interspaces, there may be some confusion of the note. In the ordinary, average chest, the ribs and the interspaces may be disregarded. After some experience it is easy enough to find the depth of pressure or force required, the necessary quickness in striking and releasing the skin from pressure, the rapidity of the strokes and the height to raise the pencil above the chest to get the best results.

A number of efforts have been made to use this plan in outlining other organs, but it has been found rather impracticable, on account of the absence of the fine sounding board, the sternum. This method of outlining the heart has been in daily use for fifteen or eighteen years and has been found so accurate that it is quite comparable to the x-rays in the vast majority of cases and is available anywhere, at any time, simply with a pencil and a metal stethoscope. It has been a great saving to a worthy class of patients, in these times of financial stress particularly, when the highly-refined, expensive tests and the hospital are out of the reach of a great many patients and this plan will be found very valuable.

Gibbs Bldg.

COST OF DOING BUSINESS

Too many people, when thinking of the bill for a physician's services, are inclined to say, "Oh well, all it cost him was a few minutes time. He can wait for his money." No thought is given to the debt accumulated in four years of medical school and a year or two of hospital training, nor to the doctor's office rent, transportation cost, etc.

Too many people also are inclined to forget what it has cost a druggist to prepare himself to give professional service. When they see in cut rate stores familiar advertised products at prices below cost to the retailer they assume that other retail stores are making an excessive profit. Most people do not know that some stores advertise popular products at less than cost to get people into their stores, expecting to make a profit by selling these people other products of unstandardized value at excessive profits.—RALPH R. PATCH.

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MENOPAUSE AFTER RADIATION

BLOODLESS castration by radium and roentgen rays frequently produces symptoms similar to those of the physiologic menopause. The disturbances are either of a vasomotor type or of a neurotic nature.

The best treatment consists in an explanation by the physician as to the nature of these symptoms and the assurance that frigidity, loss of libido, orgasm and so forth need not occur if the patient continues normal sexual activities and does not worry about such possibilities. This plan of treatment will suffice, in the majority of cases, to dispel the fears and anxieties so prone to appear.

On the other hand, such simple treatment will not help the patient with an unstable nervous system. Then the bloodless castration, the same as surgical castration, becomes a severe shock, just as a severe illness, or a major operation will produce irritability, mental depression and, in severe cases, insanity, especially if an inherited predisposition should exist. It is

my opinion that, in such unstable persons, radium or roentgen ray treatment for benign hemorrhages is contraindicated. Methods of treatment should then be used which will not be followed by an artificial menopause, such as curettage, myomectomy and defundation.

If such patients have been treated with radiations and then manifest psychic disturbances, the mode of life should be carefully regulated. Such women must have much fresh air, moderate physical exercise with regularity, as golfing, swimming, horseback riding, and hydrotherapy. The use of proteins, coffee, tea and alcoholics should be interdicted. Psychotherapy must be applied. If the patient complains of severe headaches and mental and physical fatigue, the symptoms are often relieved by scarification of the cervix at four-week intervals.

Finally, prevention of the menopause in such unstable patients appears to be the safer procedure.

H. S.

Physical Therapy in the After-Care of Poliomyelitis Patients

By Richard Kovacs, M.D., New York City

Clinical Professor of Physical Therapy, Polyclinic Medical School and Hospital

PHYSICAL therapy is the principal standby in the treatment of the convalescent and chronic stage of poliomyelitis. When properly correlated to orthopedic measures, directed to the prevention of contractures and deformities, and precisely and intelligently carried on, physical therapy greatly enlarges the field of possible complete recovery.

The convalescent stage lasts from one to three years and is characterized by the tendency of the paralyzed muscles to recover their tone and power. It is fortunate that, in the great majority of cases, the muscles are weakened rather than paralyzed. The object of treatment is to prevent the trophic changes which take place when muscles are deprived of normal nerve stimulation and to facilitate the return of normal function.

The physical measures which can be effectively employed are heat, muscle training and electric currents of low tension and low frequency. The newly-introduced, under-water exercises in heated pools offer a method for the simultaneous application of heat and exercise. Massage is of only slight help. Massage overdone and electricity badly applied have caused harm in the past and it is important that this lesson should not have to be acquired again by costly experience.

Before outlining any plan of treatment, the existing muscular power should be carefully examined and graded. One method of doing so is by testing muscle action against gravity and outside resistance; the other is by electrodiagnosis, testing for the reaction of degeneration by the faradic-galvanic current or, still better, by the modern condenser method. Electric testing is more accurate and allows a fairly definite prognosis of the improvement to be expected; it also serves as a basis for selecting the appropriate form of electric stimulation.

ELECTRIC STIMULATION

Heat, in the form of radiation from an infrared or luminous heat generator or as

a hot (105° to 110°F.) whirlpool bath, serves as the main standby to improve circulation and nutrition and to prepare the parts for subsequent exercise or electric treatment. In cases where internal heating seems desirable, diathermy should be carefully applied along the length of an extremity or through the spine. There are competent observations on record, here and abroad, showing that the efficient use of luminous heat or diathermy in the acute stage relieves pain, quiets the patient and may have an influence in lessening paralysis.

"The wellbeing and efficacy of a muscle is largely dependent on the performance by it of a certain number of active contractions. When a muscle is inactive for any length of time, it atrophies. It is an accepted physiologic principle that the exercise of the normal functions of a muscle is the best means of increasing its size and strength. The same rule applies to the partially paralyzed muscle." (Lovett).

For the reeducation of weak muscles, active exercise, in the form of well-directed muscle training, is the most natural form of treatment. The disadvantage of muscle training is, first, that only older children can be so trained. "Muscle reeducation, to be most efficient, requires an elaborate system of accessories and a well-trained staff of instructors. With one conspicuous exception, no such efficiency has yet been attained." (Tilney). If the muscles are without any power, the passive performance of the motion, as recommended, is undoubtedly inferior to active contraction by electricity.

ELECTRIC STIMULATION

The rationale of electric stimulation is based on the following considerations: If the muscle is not fully paralyzed, but only weak, the causing of contractions, not only prevents the atrophy of the paralyzed muscle bundles, but also exercises and strengthens the non-paralyzed part and thus enables it to do compensating work. In fully paralyzed muscles, electric stimulation can cause movements similar to the normal ones, and thus tends to preserve the functional properties of the muscle until

normal nerve impulse returns to carry on the work. The sudden improvement in some old cases, soon after efficient treatment has been instituted, can be explained by the fact that there are a number of unimpaired ganglion cells present in the anterior horns and they, in turn, are connected with intact nerve tracts and muscle fibers. By suitable electric and reeducative treatment, these non-paralyzed muscle fibers redevelop and are transformed from an inactive minority into an active majority.

Electric stimulation, to be effective, must be carefully planned and skilfully applied for a sufficiently long period. According to the electrodiagnostic findings, the slow sinusoidal current is used in cases showing the reaction of degeneration, and the surging faradic in cases with absence of full "RD." Treatment does not consist of simply slapping on two wet-pad electrodes somewhere along an extremity and turning on some form of current as powerful as possible. Badly-directed and badly-applied treatments of the past were mainly responsible for the indifferent, if not decidedly antagonistic, attitude of some medical men towards electrotherapy in infantile paralysis.

The most effective method of electric treatment is *unipolar* muscular stimulation. A large, dispersive electrode is placed under the cervical or lumbar spine, or at any place central to the lesion, and a small, active electrode over the individual muscles. In fully-paralyzed muscles one must be well aware of the danger of over-exercising a muscle by electricity. I do not believe that more than a flicker of the tendon is necessary to prove a successful contraction in a paralyzed muscle. This flicker may not even be visible; it is enough when it is palpable to the trained finger at the insertion of the tendon. From three to ten contractions of each muscle are ample at the start, with an increase to the maximum number effected gradually.

Treatment with a *bipolar* technic or "*en masse*" consists of placing two electrodes of suitable size at the opposite ends of an extremity; for instance, one electrode may be applied to the sole of the foot, the other under the buttocks or under the sole of the other foot. The surging current, passing along the entire extremity, results in a fairly even contraction of all muscles, provided their response is about equal. The bipolar technic is a lazy operator's method

because, after placing the electrodes in position and turning on a sufficient amount of current, he can stand by and let the current do the rest. It is advisable only if the muscles of the extremity are all nearly evenly affected. It offers the advantage of treating a whole extremity suspended in a cast. Treatment is started at ten minutes' duration and this is gradually increased, according to the response.

Preceding and during electric treatment, the affected extremity should be placed so that the paralyzed muscles are relaxed and not kept on a stretch by their healthy antagonists. Muscle training can and should be applied systematically alongside the electric treatment, and the latter should be abandoned in its favor as soon as there is a return of active muscular power.

HYDROGYMNASTICS

Under water exercises are carried out in a heated, indoor swimming pool, so constructed that children or adults with paralyzed limbs can be easily placed into it and while there be suspended in a harness fastened to an overhead trolley. The sustained heat in the pool improves the circulation and nutrition of the parts and has a relaxing effect on spastic limbs; the buoyance of the water takes weight off the body. Muscles too weak to act against gravity will thus have a chance to work freely, provided they are capable of active voluntary contraction. This method does not offer the possibility of individual stimulation of paralyzed muscles as electricity does, but its general tonic and stimulative effects are unexcelled.

Massage, according to Lovett, improves local muscular tone and nutrition and antagonizes muscular atrophy—and *nothing more*. It will not restore muscular power. Stookey says, "Modern experimental evidence proves that massage is only of slight benefit in preventing atrophy of paralyzed muscles." In paralysis, therefore only the slightest form of massage is indicated because, owing to the atrophy of the paralyzed muscle, pressure may be transmitted to the blood vessels, causing paralytic dilatation; thus, heavy massage will defeat the end sought. In my own cases of paralysis, I use massage only as an adjunct, for the further improvement of local circulation; very light massage, for from five to ten minutes at a time, to one extremity, is all that is indicated.

As combined orthopedic support and physical therapy is systematically carried out, the atrophy of the muscle groups in which recovery was to be expected gradually disappears and muscle response improves. Long, persistent treatment is the keynote of success, skilfully utilizing all

therapeutic measures and avoiding over-tiring of muscles at any one time. It takes a long time for the regeneration of muscles to become complete after the original attack and, therefore, much can be accomplished, even at a later stage, in aiding the regenerative process in the muscles.

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CLINICAL MISCELLANY

Mechanical Vibration

MECCHANICAL vibration seems to be almost in the discard these days, when the various electric currents are so popular. A few years ago it seemed to loom up with considerable prominence, but now we seldom see it mentioned in our journals. This would seem to be due to lack of teaching regarding this important adjuvant to medical practice.

Very few physicians seem to know or understand the proper technic in using vibration, and also very few have felt it worth while to look into its merits. I know of one physician who felt impressed with the therapeutic value of mechanical vibration, as demonstrated in some of the meetings, and purchased an expensive vibrator. Being busy, he put off taking time to acquire the necessary experience and knowledge of its use, by going to someone who could teach him, and for two or three years the vibrator remains unused.

In most offices of those who use physical measures, we find the ever-popular diathermy used, in some others the valuable static currents, and in others the combination with other apparatus that will meet the usual requirements of general practice, but one may look in vain, in many, for a vibrator.

Splendid results are obtained by the use of the various electric currents when properly applied, both in functional and organic conditions, but, did the average physician know it, one may secure the same good results in a much reduced period of time by the added use of properly applied mechanical vibration. This applies particularly in the various circulatory conditions, such as myocardial insufficiency, with its rapid and weak pulse. Vibration of the

vertebral interspaces of the seventh cervical and first dorsal will rapidly improve the tone of the pulse, as well as reducing its rapidity, and the heart will evidence the corresponding muscular improvement. Such vibration should be given in the interrupted manner, from side to side, with firm pressure and for two or three minutes. It is well to watch the pulse while treatment is being given, for patients react differently. Some cases respond slowly and a longer treatment may be desirable but, in my experience, a second short treatment, following after a short interruption, will do the work better than will a longer treatment applied continuously.



5

Courtesy, General Electric-X-Ray Corp.
Vibratode Described.

The same value applies to the treatment of hyperpiesis and hypertension. The effect is generally better when vibration follows the use of either diathermy or autocondensation or both, as some cases need both. In these cases we apply vibration to the interspaces of the second, third and fourth dorsals, from side to side and from above downward, with firm pressure and for five full minutes. Some regard it as being better therapy to extend the vibration down to the sixth dorsal interspace. In some cases it may be necessary to give a second five-minute treatment, following the first after a couple of minutes of rest.

The shape of the vibratode is important. The usual ball type will not fit in between the vertebrae. There is one with a ball

top, but cut out for a neck, which allows the vibratode to be slightly turned in to fit the interspaces, and this will be found to be the best and most satisfactory.

Some use a thin rubber mat over the processes, to soften the effect. If care is used, there will be no overriding of the bony processes, which would be unpleasant when it happens. If the usual ball vibratode is used, this mat arrangement may be worth while. Personally I have never used it and, since I find it easy to vibrate in the usual manner, I cannot advise its use.

Vibration of tender nerves is not desirable nor is it advisable. One must employ the same common sense and judgment when using the vibrator as when applying any other measure for relief.

Vibration is not a cure-all nor is it useful in all conditions, but it has many virtues and certainly its value has been repeatedly proved and therefore it needs no defense, but it is not sufficiently well known to be given the chance to demonstrate its large usefulness. If those who do understand its principles of application and the end-results to be obtained, would be more consistent in bringing it before the profession, in time vibration would, no doubt, come into its own.

WILLIAM MARTIN, M.D.,
Atlantic City, N. J.

Restoration of Movement in Stiffened Joints and Muscles

THE "pool bath" is extensively used for restoring movement in stiffened joints and muscles. The temperature varies from 97° to 104°F. At the lower temperature it is sedative and suited for subacute cases. At the higher, it is stimulating and more adapted to chronic cases.

The bath is of sufficient size to allow the patient to stand, sit and walk a step or two. Combined with the pool is an underwater douche, at a temperature 10° above that of the bath. This has a powerful effect on the skin circulation and, in itself, constitutes a very efficient form of massage.

A limb immersed in water weighs less and moves with less fatigue than under ordinary circumstances. The limbs are supported and movements that would be otherwise impossible can be performed. The importance of getting a patient to move his stiffened joints at the earliest

possible moment after the inflammatory condition has passed off cannot be too strongly emphasized. No joint can possibly attain a healthy state unless it exercises its proper function of movement. Movement of the limbs in water is something between active and passive motion. Volitional motions are made and carried through with a much less expenditure of energy.

The too-frequent immobilization of joints for extended periods is responsible for much permanent stiffness and consequent invalidism. Along with the passive or active movement of the joint, the muscles that control it must receive attention by massage and, if necessary, the application of the faradic current.—DR. M. R. RAY, in *Practitioner*, (Lond.), Nov., 1931.

X-Ray Treatment of Ganglion*

GANGLION is a synovial lesion of the tendons and has no connection with the joints. It is due to sudden or chronic trauma, causing the synovial membrane to herniate through a rupture in the tendon sheath. The tumors sometimes resemble lipomas.

Treatment of these lesions with x-rays seems to be helpful in many cases. Surgical removal is sometimes practiced. A good method, in certain cases, is the injection of sclerosing solutions, as is done in the treatment of varicose veins.

HOWARD HAILEY, M.D.,
Atlanta, Ga.

Effect of Roentgen Rays on Glands of Internal Secretion

FROM a clinical viewpoint, weak irradiation does increase functional activity, as especially illustrated in the treatment of gynecologic disorders by irradiation of the ovaries. The clinical application of pituitary radiation, while beneficial, does not imply always a stimulating action; some of the results are probably due to destructive effects. The results noted in the treatment of childhood endocrinopathies by irradiation of the thyroid, pituitary and gonads are startling, in the hands of one particular investigator, but they should be confirmed by others before they can be accepted. Radiation of the adre-

*Abstract (by G. B. L.) of a paper read before the Southern Medical Association, November, 1931.

nals, pancreas, testes and parathyroid has not given us any definite information, as yet, in the treatment of dysfunction of these glands.

Stimulation by means of roentgen rays may in time be one of the methods of procedure in the treatment of endocrinopathies, but, before this is possible, it must be placed upon a scientific, accurate and rational basis. A proper knowledge of the underlying endocrine factors in the causation of the disease and a standardized method of radiation, with a standardized table of dosage, are requisites before any hope can be entertained for success in stimulative radiation. — DR. MURRAY B.

GORDON, Brooklyn, N. Y., in *Radiology*, Dec., 1931.

Hyperpyrexia Treatment by Hot Baths in Taboparesis

A RATHER severe case of taboparesis showed great mental and physical symptomatic improvement (including cerebrospinal fluid findings) following a series of hot baths. The patient was kept for an average of about 50 minutes in a bath, kept at a temperature of from 106 to 110° F. Altogether 41 baths were given in a period of about 6 months, with intermissions. — DRs. C. R. GIBSON and R. G. GORDON, in *Brit. Med. J.*, June 13, 1931.

RECENT ABSTRACTS

X-Ray Treatment of Hodgkin's Disease

In an article by Dr. F. W. O'Brien, of Boston, in *Radiology*, Dec., 1931, it is indicated that certain statistics of roentgen therapists, analyzed in the light of the natural history of Hodgkin's disease, show that suitably filtered radiation, over a rather wide range of wave lengths, given in fractional dosage, seems definitely to prolong life in selected cases and, to the majority, offers palliation, with return to relative well-being not given as consistently by any other known therapeutic measure.

The records of the Boston City Hospital show that, in the period 1919 to 1928, 19 cases of Hodgkin's disease were treated by x-rays; 15 were males and 4 were females; of the males, 7 were in the 20-30 years age group and 4 in the 30-40 years age group. All of these patients are dead. The average duration of life for the group, from the beginning of symptoms, was 3 years 11 months, which compares well with groups reported by others, when age and sex incidence are considered.

Temperature Distribution with Diathermy Electrodes

The common types of electrodes used in diathermy work are the thin, pliable metal plate and the thick cotton pad covered with copper gauze and soaked in salt solution.

In *Arch. Phys. Therap.* X-Ray, Radium, Sept., 1931, Drs. A. Hemingway and D. Collins, of Univ. of Minn., report the results of animal experiments to find the deep and surface thermal effects obtained with different types of diathermy electrodes, as registered in the tissues by thermocouples.

The results show that it is possible to raise the muscular and cutaneous temperatures to the

general body temperature in from 20 to 30 minutes with a current of 8.2 milliamperes per square centimeter. To raise the temperature 2 to 5 degrees C. higher, current values must be increased to 10 to 12 milliamperes per square centimeter for an hour's duration.

The maximal thermal effects are at different depths from the surface for different electrodes. A metallic electrode causes greater cutaneous than muscular heating. With the pad electrode, however, a higher increase of temperature occurs in the muscle than in the superficial layers of tissue. Hence, for cutaneous heating, a metallic electrode is to be preferred; while for increased muscular heating, a saline pad is desirable.

With the metallic electrode a more rapid rise of temperature takes place during the early part of the diathermy treatment; constant equilibrium value is reached more rapidly than the corresponding temperature below the saline pad.

Roentgenologic Diagnosis of Appendicitis

According to the experience of Drs. A. B. Moore and E. A. Merritt, of Washington, D.C., as expressed in *J.A.M.A.*, Nov. 14, 1931, the appendix can be visualized by roentgenologic methods in more than 80 percent of the cases. The opaque material should be in as fluid a suspension as possible; at least 12 ounces should be given, approximately 18 hours before the examination. Enemas may be used when considered more advisable.

The essential feature of the examination is palpation under fluoroscopic control. The patient should be rotated and the position changed as may be necessary.

The roentgenologic signs are: (1) Tenderness and muscular rigidity, produced by pressure directly over the appendix sufficiently deep to permit satisfactory exploration of the

cecum; (2) fixation of the appendix; (3) pain referred to the appendix, produced by pressure over other parts of the abdomen. This sign is based on the well known clinical principle of referred pain, the visualization and knowledge of the exact position of the appendix rendering it much more accurate; (4) abnormal position of the appendix. Inflammation in an abnormally situated appendix will not produce pain or tenderness over McBurney's point, and knowledge of the exact location of the appendix will be of the greatest aid to the surgeon in selection of the avenue of approach; (5) spasticity of the cecum, which is often the reflex of disease of the appendix; (6) pain referred to other parts of the abdomen, produced or increased by pressure over the appendix.

Fever Therapy in Arthritis

In *Illinois M. J.*, Nov. 1931, Drs. D. E. Markson and S. L. Osborne, of Chicago, report upon their results in 6 cases of chronic infectious arthritis, treated by hyperthermia induced by diathermy. These patients had been extremely resistant to all forms of management over periods of from 1 to 3 years. Two (2) patients were markedly improved, 3 were improved and 1 not improved. The authors feel that the method offers definite possibilities in the management of selected arthritic cases and that it is without danger.

A high-frequency machine of low voltage is used, having a capacity of 4,000 milliamperes. The entire trunk, after being anointed with a lubricant jelly, is encased between Neymann fenestrated electrodes, which are held in place by an especially made canvas jacket which prevents burns and discomfort.

It is essential that strict attention be given to the bed and wrappings of the patient, so as to avoid heat loss. Insulating rubber sheets and woolen blankets are plentifully used.

A rectal temperature of 104°F. or more is maintained for 10 hours. Patients perspire freely and are encouraged to drink plenty of water. Maintenance of the temperature for 7 to 8 hours usually gives good results. Poorly maintained temperatures give poor clinical results.

Joint pains may be severe during the early rise of temperature, but disappear at the height of fever. Weakness, dizziness, chills, restlessness and other concomitants of fever therapy may be expected and should be provided for.

The Fed Meal as an Index of Colon Function

In *Radiology*, Nov., 1931, Dr. A. B. Smith, of La Jolla, Calif., states that, in his experience, the fed meal affords a far more satisfactory means for the study of colonic function than does the enema; moreover, the enema frequently gives a misleading picture.

Dr. Smith uses a meal which more nearly simulates the habitual contents of the colon than does the usual contrast meal. For this purpose oatmeal as ordinarily cooked has seemed the most satisfactory vehicle. Other cereals may be used, but the oatmeal-barium mixture seems to be more palatable than some of the others. This

may be taken as part of the ordinary breakfast and observations made in 8 and in 24 hours and continued as long as indicated. By this means barium is incorporated with the usual components of cellulose and bulky food material and the behavior of the colon under ordinary conditions is more nearly simulated.

At the end of 5 hours the standard meal should have left the stomach and the head of the barium column should be in the ascending colon. Failure to make this progress implies hypomotility, either gastric or of the small intestine, or some obstruction. In 8 hours the transverse portion or even the descending portion to the sigmoid should be filled. As a general statement, at the 24 hour observation the colon should be outlined more or less well throughout its entirety. Departures from the normal picture are recognized by abnormal rate of progress, abnormal tone and abnormal haustration. All these points and their recognition are discussed by the author.

Hyperpyrexia by Diathermy

In *Brit. J. Phys. Med.*, Oct., 1931, Dr. C. A. Neymann, of Chicago, reports upon the production of fever by diathermy, a method, which he has used for the past 4 years. He employs a machine which can deliver, under load, not less than 7,500 M.A., 35 to 100 volts effective, and has a frequency of 500 to 1,500 kilocycles.

The patient is anointed with conductive jelly and the special pliable metal electrodes are applied and held in place by a properly fitting canvas jacket, so that the electrodes are not easily displaced, even by vigorous movements of the patient.

The patient is heavily insulated against heat loss in his bed by blankets and rubber sheets. The current is gradually turned on to about 3,000 M.A. The temperature is constantly taken until a fever of 103.5°F. is registered, and the current is then turned off. But the temperature still rises until it reaches 104.5° in about 2 hours. It may gradually rise to 106°, when the canvas jacket should be removed. If fever should rise to 106.5° the patient should be immersed in water at 50°. Above 102.5° all patients become restless and excited.

This method may be employed whenever hyperpyrexia treatment is indicated. The author has used it especially in 89 cases of paresis, 41 percent of these cases showed an absolute clinical remission; 40 percent remained unimproved. In 150 patients altogether, treated for various conditions, only 1 death was attributable to the method. Some patients have had as many as 50 treatments, with over 200 hours of fever above 103.5°F.

Calculation of Roentgen-Ray Dosage

In *Radiology*, Nov. 1931, Dr. W. Withers, of Denver, states that he has tried various measuring devices in an attempt to determine the output and erythema dose for various x-ray installations. None of them has been so satisfactory and so "foolproof," as an ionization chamber consisting of three plates; two negative and one positive, separated 10 mm., the negative plates being the container for the chamber.

The plates are connected to a microvolt meter by a suitable metal-covered cable, which prevents ionization within the cable.

This chamber has a filtration corresponding to 0.5 mm. of copper, and is arranged so that it is indicating ionization current whenever the transformer is energized. The charging current for the ionization chamber is supplied by a Westinghouse 96-volt battery charger. A volt meter was cut into the line so that fluctuation of the impressed voltage could be read at all times.

The author has used, with perfect satisfaction, this arrangement of the chamber and meter to determine x-ray output. It has come to be the instrument for determining dosage in the last analysis, rather than the milliamperemeters that are in their usual place in the circuit, and is the basis of calculation for determining output. The meter is easily calibrated with the biologic reaction of human skin or fruit-fly eggs and should be checked against 100 or more milligrams of radium every week or two.

BOOKS

Granger: Radiological Study of Sinuses and Mastoids

A RADIOLOGICAL STUDY OF THE PARA-NASAL SINUSES AND MASTOIDS. By Amédée Granger, K.C.B., K.C.I., M.D., F.A.C.R., Professor of Radiology, Louisiana State University Medical Center; Director of the Department of Radiology, Louisiana State Charity Hospital, New Orleans Gold Medal of the Radiological Society of North America in 1926; Gold Academic Palms of France in 1929. Illustrated. Philadelphia: Lea & Febiger, 1932. Price \$5.50.

The "Granger Position" is familiar to every roentgenologist engaged in sinus diagnosis. In this volume Granger himself gives a detailed account of the experimental work which led to its adoption and of the advances which have subsequently followed.

For study of the para-nasal sinuses, the head is held in a definite position by placing the nose of the subject through an opening in a suitable head rest, equal pressure being exerted on the superior maxilla and supraorbital regions. The head rest is inclined, first, 23° with respect to the x-ray plate, the rays passing vertically through the sagittal plane of the head and on a line with the external canthus of the eye. A second exposure is made in the so-called 107° position (the head tipped 90°+17° forward), the rays passing through the sagittal plane of the head on a line with the lower edge of the tragus of the external ear.

Strict adherence to the conditions outlined permits, not only the securing of pictures of uniform value for the study of individual sinuses, but, in addition, permits the accurate comparison of pictures made upon the same individual from time to time.

To the above material is added a first-hand discussion of Dr. Granger's study of the adult and infantile mastoids.

Perhaps the most valuable portion of the volume is the group of 113 full-page reproductions, illustrating in detail the radiologic points made in the discussions. Every roentgenologist can make good use of this book.

D. L. T.

NEWS NOTES



Ultraviolet All Day

It is now possible to give indoor workers the benefit of ultraviolet radiation during all the hours when artificial light is used, by means of the double lamp recently perfected by the Westinghouse people and shown above.

The upper globe is a 200-watt lighting unit, which also acts as a ballast and eliminates the necessity for a transformer for the G-1 ultraviolet glow-lamp below.

It is estimated that the average daily exposure to a lamp like this is approximately equal to fifteen minutes under a therapeutic floor lamp.

THE • SEMINAR

[NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted. Discussions should reach this office not later than the 1st of the month following the appearance of the problem.]

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, North Chicago, Ill.]

PROBLEM NO. 1 (MEDICAL)

Presented by Dr. F. A. Wheaton,
Bellingham, Wash.

(See CLIN. MED. AND SURG., Jan., 1932,
p. 51)

Recapitulation: An active and ambitious woman of 46 years had colitis 25 years ago and apparently recovered. Seven years ago her gall-bladder was removed and then followed a subphrenic abscess draining through the pleura, and several stormy years. In 1924 menorrhagia began; in 1928, the menses ceased for six months and then began again, with profuse flow and an offensive odor; in 1930 they ceased again and climacteric symptoms are prominent.

In 1929 she had an attack of influenza, and soon after noticed denuded patches on the mucous membranes of the mouth, vagina and conjunctivae. These begin as a swollen spot, which becomes raw, develops a yellowish crust, heals, and breaks out elsewhere. They are worse during menstruation. No lesions have appeared on the skin and her digestion is good.

Rather extensive examinations of the various organ systems have shown no significant positive findings.

Requirement: Suggest diagnosis and treatment.

DISCUSSION BY DR. G. J. WARNSHUIS,
CEDARBURG, WIS.

The outstanding features upon which an analysis of this case can be based are:

- 1.—First child at eighteen years of age;
- 2.—A major operation seven years ago, followed by a serious septic process extending over a period of months;
- 3.—Absence of the gall-bladder and

probable associated hepatitis, with impaired liver function;

- 4.—A history of dental infection;
- 5.—Dysovarism since 38 years of age;
- 6.—No children since 23 years of age;
- 7.—Herpetiform eruptions of the mucous membranes of the mouth and, to a lesser degree, of the vagina, accompanied by dysphagia, characterized by frequent remissions and aggravated at the menstrual period;
- 8.—Colitis from time she was seventeen to twenty-two years of age. "Constipated most of her life;"
- 9.—Associates onset of illnesses with influenza attacks;
- 10.—Blood pressure slightly elevated, particularly the diastolic;
- 11.—"Cancer complex."

There is the picture. A number of details are lacking, but the story is sufficiently complete so we can label it (or diagnose it) as a neuro-hepatic-endocrine syndrome, even if the neurologist found "no abnormalities."

We can not arrive at an accurate conclusion in respect to true nature of the endocrine deficiency from this history, because we have no data in respect to stature, body conformation, facial features, developmental history, blood sugar, etc., that would determine whether the dysovarism is primary, or secondary to thyroid and pituitary dysfunction. It is well, also, to keep in mind that the endocrines are highly susceptible to emotional disturbances and the functional activity of the liver.

There is much in the history of this patient's liver that deserves serious consideration. It is just such unfortunate complications as occurred in this case (and

the best operators have them) that should influence us toward a little more conservative attitude in regard to cholecystectomy. Perhaps the liver can function normally without a gall-bladder, but it might be interesting to have some statistics on the longevity of persons who have had their gall-bladders removed. The operation involves a good deal of surgical shock and sometimes prolonged convalescence. Intestinal adhesions always result from it. It, no doubt, has its indications but, with the modern advantages of diathermy and infrared rays, along with appropriate medical treatment, much can be done in the way of relieving cholecystitis, as well as overcoming the associated hepatitis. Even where marked induration and calculi may necessitate surgical treatment, the simpler, less radical drainage, combined with these measures, can frequently be substituted for cholecystectomy.

A small infrared lamp, that this patient could use at home every evening, would give her a great deal of comfort and do her good. In addition, diathermy through the liver, with a 3 x 4 inch electrode anterior, just above costal border, and a 4 x 5 inch electrode posterior, one inch higher, using twenty to thirty minutes treatment, with moderate milliamperage, twice or three times weekly, followed by general ultraviolet irradiation of the trunk, will prove helpful in overcoming the damage that has been done.

Psychologically, a less introspective mental life may have to be cultivated. It is difficult to determine, at times, where we have an angioneurotic eruption such as this appears to be, how much of it is the direct result of toxemia, a disturbance of the colloidal balance, changed chemistry in the capillary bed and tissue cells due to some hormonal deficiency, the toxic effect of incompletely reduced metabolites, and how much is purely a neurosis. Positive results can be secured only by attacking the situation from both angles. Many people are unhappy because they have a vague and shallow philosophy of life. Others have decidedly morbid conceptions that need to be wiped out. The physician who gets under a patient's shell and "takes him apart," giving him self-confidence and hope, will make him happier, even if he is only partly successful in removing the ailment. It requires a great deal of time and effort but it pays.

I have ignored the possibility of syphilis, although a negative Wassermann reaction, especially without a provocative course of potassium iodide, does not preclude it. In this case, however, the disturbance of function is so apparent that it will readily account for the patient's symptoms and, with careful attention to the details of the history, syphilitic infection can, in all probability, be eliminated. The patient's description of her intestinal symptoms invites discussion and typifies their neurogenic character.

DISCUSSION BY DR. E. O. HOUDA,
TACOMA, WASH.

The complication of postoperative subphrenic abscess, three months after gall-bladder surgery (if it may be called such), with a drainage of bile-tinged and otherwise clear fluid, is no doubt directly attributable to some leakage that failed to drain properly for unknown reasons. Since the history gives no evidences of true pus from either chest or abdominal drainage, one cannot set aside the consideration of a leak in the biliary system as the outstanding postoperative feature in this case.

Since the patient made a satisfactory two-year recovery, after two-way drainage, one may presume that no active residuals remain, in so far as abscesses are concerned. One must also presume that this patient had cholecystitis, which, of course, could not be true without micro-organisms. Most gall-bladder infections are not, however, pyogenic.

As yet, little is being done in the matters of determinative bacteriologic studies of gall-bladder specimens, transferred into sterile test tubes during operation, to avoid subsequent contamination, and the use of those very effective immunizing agents, autogenous vaccines derived from the cultures obtainable from practically all pathologic tissue. In my hands, there has never been a specimen of the many gall-bladder tissues thus studied that has not developed organisms in pure culture; and the post-operative use of vaccine has been followed by satisfactory results.

The time is fast approaching when the flourish of a scalpel and the removal of sick flesh will be considered not inclusive enough, but merely as a necessary step in determining the invisible causes of all pathologic conditions.

In this instance, since nothing of such a nature has been done (and chronic diseases

are many times associated with chronic bacteriemia), there appears to be little question that the present and past protean symptoms of this patient, are but evidences of *chronic bacteriemia*. If this is demonstrable (as it no doubt is, through the newer darkfield methods), it is amenable to autogenous vaccines, particularly if these are incubated for 48 to 72 hours and inactivated with heat, before injection in 5 to 10 cc. doses, at 48-hour intervals.

A long-distance diagnosis is that of a *chronic bacteriemia*, the organisms having an ascending and selective preference for the structures of the alimentary system.

DISCUSSION BY DR. EMIL C. JUNGER,
SOLDIER, IA.

This woman, no doubt, has been above average in vitality and physique in years past, and her present trouble is probably due to a long-drawn-out toxemia of chronic type.

Her liver abscess, that discharged through the bronchial tree, and later was drained from the pleural cavity, was probably due to an infection from her previous colitis, which was, perhaps, amebic dysentery. The infected teeth also added to her toxemia and so did her gall-bladder infection.

Her present mucous patches (if not syphilitic) may be due to an endocrine disturbance, which latter is also presumably due to the chronic toxemia of the nervous system. This may be running around in circles, but I stick to toxemia as the primary cause.

Give this woman plenty of mineral water and exercise in the open, as in the past. Diathermy over the liver, diaphragm and lungs, to liven up the old pus-laden areas, will do some good. If she will get out and play golf until she makes the average course in 80 or 85, I believe she will find life worth living again. If the trouble is syphilitic, it must be treated in the usual way.

DISCUSSION BY DR. EMMET KEATING,
CHICAGO, ILL.

Doctor Wheaton's patient has had a most unfortunate surgical experience, which might have been avoided had the ambitious operator drained the gall-bladder instead of removing it. The lesions of the tongue, mouth and vagina that appear periodically are the pictures of inflammation with superficial necrosis. The former

colitis and subsequent influenzal attack are guides to diagnosis.

Her present condition very likely has its source in the colon, aggravated, as nearly every condition in the female is aggravated, at the time of the menstrual period. She is 46 years old and, of course, her physician should pay very particular attention to her endocrine needs. I should have a very careful examination of the stool made, at a competent laboratory that is equipped to furnish autogenous vaccines made from the stool, which, in addition to the bacterial invader, or as a result of the activities of the bacterial invader, may be extremely acid. If so, the daily use of 1 to 2 percent sodium bicarbonate enemas, gently administered, with the patient in the Trendelenburg position, is a great help. Endocrine therapy is important in this case.

DISCUSSION BY DR. J. S. LANKFORD,
SAN ANTONIO, TEX.

No case has come before the Seminar at any time where there has been a more thorough diagnostic study. Only two sides of the case have not been discussed: the unknown field in blood study, where no man has trod, and the endocrines.

The patient has been very ambitious, active in work and play, deeply engaged in the kinetic drive of life, living under a nerve strain for a great many years. That is one strong point.

Twenty-five years ago she had a serious colitis and that was the beginning of the gall-bladder disease. More than likely there were ptosis and stasis with her constipation and colitis, and it is easy to account for the infection of the gall-bladder through the duct, with a low degree of inflammation for many years, finally reaching a point where operation became imperative. This inflammatory state extended not only through the liver, but into the lungs and pleura, resulting in chronic empyema, necessitating resection, and here was the basis of a chronic streptococcemia and perhaps other abnormal conditions of the blood. This chronic condition has been a great strain upon the whole endocrine system for a long period and explains the menorrhagia. It is not uncommon to have clots with an offensive odor during the menopause, in the absence of malignant disease.

An attack of influenza added to the streptococcemia and to all the disabilities of organ

function and blood. The condition of the tongue, conjunctivae and vagina is probably being affected by the same blood state. These lesions of the tongue are a source of anxiety, for the lady is possibly in a precancerous state, where malignancy might develop.

At the basis of all this lies the question of congenital syphilis, coming, possibly, from several generations back. The repeated Wassermann tests of the blood and spinal fluid are all right, so far as they go, but there are extremely important conditions which we cannot yet measure, in connection with the fluid element of the blood, where lies immunity, and many elements of primal importance, for which we have so far no tests. Here, if anywhere, is to be found the secret of the continued ill-health, with the peculiar condition of the tongue; and the diagnosis might be stated to include streptococcemia with associated infectious elements, congenital syphilis, beyond any test that we know, and disturbance of the endocrine functions. This tongue is very suggestive of syphilis and we must learn to disregard the negative Wassermann reaction in the presence of positive clinical symptoms.

As a practical shot into the dark spaces, my best guess would be, perhaps, not to administer arsphenamines, but to try the mercurials, given in moderate dosage, along with a general, constructive pluriglandular treatment. This combination should be used in the hope of restoring better functions and controlling that unseen condition in the realms of the unknown.

FURTHER NOTES BY DR. WHEATON

This patient's condition has been diagnosed as *leukoplakia*, *pellagra* and *pemphigus*, and appropriate treatment for each condition has been followed for long periods, including six months in a hospital on an anti-pellagra diet. She has had three months' treatment with arsphenamine and neoarsphenamine. She has been examined by a competent endocrinologist, who reports no abnormalities in that direction.

CLOSING DISCUSSION BY DR. GEORGE B. LAKE, CHICAGO

When one encounters a case of chronic illness, persisting over a considerable period of time, in which the physical signs are not typical of any specific organic disease and the laboratory tests are negative,

one must concentrate one's diagnostic efforts upon either psychogenic or endocrine disorders or both (for they are frequently associated).

The general history of this patient simply gives the background for a probable toxic state, from the bowel or the liver or both. Toxemia always has profound effects on the endocrine glands and the nervous system, and the suggestion of Drs. Keating and Houda as to clearing it up are fully in order.

Her menstrual history, taken with that of her former high-pressure life, points distinctly to some type of endocrine disorder, which should be fully studied. This was probably aggravated by the fear of cancer, which must have been rather severe to cause her to reduce her diet until she lost thirty-five pounds in weight. The lesions in the vagina have probably interfered with her sex life, which introduces another psychic and endocrine complication into the picture.

If the lesions have any local basis, the possibility of a mycotic infection, such as sporotrichosis or aphthous stomatitis, seems to have been the only one not fully considered. It would be well to test the patient with Tricophytin, to determine whether or not such a condition is present and, if so, to treat the case accordingly.

The possibility of latent syphilis is not ruled out by negative Wassermann reactions. In such cases the *luetin* test is much more reliable. If such a condition is present, treatment with mercury (as suggested by Dr. Lankford), with or without iodides, would probably be more effective than with the arsphenamines alone. Bismarsen might be very helpful.

Here is a case that one would like to see studied according to the methods of J. E. R. McDonagh (see CLIN. MED. AND SURG., Jan., 1931, p. 17), and possibly treated along that line. In any case, the chemistry of the blood and urine should be studied with great care.

Drs. Warnshuis and Junger feel that the condition is largely psychogenic, and so do I. This case will not, in my opinion, be fully understood until the patient has had a thorough psychic investigation by an intelligent and well-trained psychiatrist or psychotherapist—not a neurologist, as there is no evidence of an organic lesion of the nervous system. Treatment along this line will be determined by the conditions found.

If a mycotic infection and syphilis can be ruled out or discovered and treated, the handling of this case falls under three heads: (1) discovery and correction of the psychic factor or factors; (2) discovery of the source or sources of toxemia and metabolic irregularities and their elimination; (3) endocrine therapy until the deficiencies present are supplied and a more normal life is resumed, and possibly throughout the rest of the patient's life.

PROBLEM NO. 3 (MEDICAL)

SUBMITTED BY DR. C. H. KENNEDY,
FORT SMITH, ARK.

The patient is a female, aged 12 years, of rather tall and slender build and about ten pounds under-weight. She has had pertussis, measles and chickenpox and has been rather delicate in appearance for the past several years, but has never had any serious sickness except a light attack of pneumonia in 1927, followed by a rather slow resolution. She likes to read, but is not especially studious in school. She is quick to grasp ideas and is of ordinary intellect; is also quick-tempered, nervous and has a tendency to sulk when crossed. She plays with other children normally but tires easily on exertion.

Family History: On the mother's side there is a grave suspicion of her having had childhood tuberculosis, but she (the mother) is now well and strong and has not had any other serious illness. The grandparents on the mother's side are living and there is an unproved suspicion of tuberculosis in the grandfather, who has had pronounced cardiac asthma. The mother and her two daughters have lived with the grandparents for the past six years. The other little girl is about six years old and is strong and healthy.

No history is available on the father's side, except that he was of a similar build, was erratic, suspicious and quick-tempered and at one time was thought to have been mentally unbalanced for a time. He left his wife and two little girls six years ago and has not been heard from since.

There is a history of a close contact in the home, for a period of several months, about four or five years ago, with a proved advanced tuberculous patient, who died a few months after the contact.

Physical Findings: The patient is a brunette (black hair and brown eyes); eyes react normally to both light and accom-

modation; no enlarged glands about the throat; thyroid only slightly palpable; tonsils about normal in size and she has never had any throat trouble; teeth in good condition; chest contour, normal; a slight respiratory murmur is heard over the lung, but it is not extensive nor very pronounced; slight depression in supra- and sub-clavicular spaces; respiration, fairly free and full; *abdomen*, thin flat and no tympanites present; *heart* sounds, normal in rhythm but slightly rapid—usually about 90 or 95 per minute—with no displacement and no murmurs heard.

The genitals are well developed, with some signs of approaching puberty; hooded clitoris, which was freed some two years ago with the hope of relieving nocturnal enuresis, which had been present all her life; hymen intact (not a masturbator); no vaginal irritation nor discharge.

Reflexes, bones and joints are normal; skin clear, but of a rather anemic and sallow appearance.

The *present illness* began about thirteen months ago, with what at first looked like an ordinary case of urticaria, but which later developed into a darker-red eruption, practically without any itching, except when it began to disappear, at which time the skin becomes somewhat roughened and scaly.

This eruption appeared on practically all parts of the body, including the face, and at times there was considerable swelling about the eyes and face. The attack persisted for about two weeks, in spite of all medication, and was accompanied by a fever ranging from 100° to 102°F., loss of appetite, some nausea and some vomiting; bowels usually constipated. There has been a recurrence of these attacks at intervals of from two to six weeks ever since. The longest period of freedom from them was about six weeks during the summer months, when she was out in the country.

With the recurrent attacks there has developed a rheumatic condition affecting, at times, practically all the joints of the body, but the knees and elbows most usually. These attacks last any where from two days to two weeks, and between the attacks the skin clears, the appetite is fairly good, she feels well and picks up some of the lost weight. She had to be taken out of school on account of the frequency of the attacks. These eruptions have been

brought on once or twice by excitement, such as an exciting picture show, after which the eruption developed almost immediately, but was of less severity and lasted only a day or two.

The last and most severe attack came on about the middle of December, 1931, and lasted for nearly a month, with symptoms, during the latter part of the attack, so severe as to threaten life. The onset was similar to the other attacks, but gradually grew in severity until the temperature reached 104°F., axillary; pulse, 140; and respiration, 50. The skin was more or less covered with the eruption most of the time, but shifting from place to place.

During this attack the pain became so severe that it was necessary to keep her under the influence of opiates for about four days. The pain at first centered about the kidney region on the back, gradually extended the full extent of the spine and, during the most severe stage, there were unmistakable signs of meningitis, including extreme opisthotonus position. There was a general tenderness over the whole body and she could be moved only with difficulty on account of the pain and tenderness, which extended to the entire abdomen, with considerable tympanites and some tenderness of the bladder region, with difficult urination. After the severity of the attack, diarrhea was present for a day or two.

One of the most striking conditions was the development of fluid in the pleural cavity, which came on almost over night and then disappeared almost as suddenly. It was so pronounced as to gravitate with change of position. There was some cough during the severity of the attack, with some expectoration and a few blood streaks. After five days of this severity, the pulse,

temperature and respiration returned to about normal, the abdominal tenderness being the last severe symptom to disappear.

During this severe attack the patient absolutely refused all food and medicine, except such as was absolutely forced. The appetite returned in a few days after and became almost ravenous, but was kept under control.

Laboratory Findings: Numerous urine tests have been made during the past year and, as a rule, there was a rather low specific gravity (about 1.008); rather high acidity; and, on two occasions, a slight trace of albumin, but never any casts until during this last severe attack, when the urine was loaded with albumen, pus cells and casts of both hyalin and granular type. This has since cleared up entirely.

The blood Wasserman reaction was negative; plasmodium of malaria, negative; red cells, about one-third below normal, with about a normal white count and hemoglobin low, to about correspond with the red count.

The Mantoux intradermal test for tuberculosis was negative, as were sputum examinations, during the height of the attack. A basal metabolism test was not made. A roentgenogram of the chest, about a year ago or less, was reported negative for tuberculosis.

Two or three of the less severe attacks have cleared up promptly on administering salicylates, and once on acetates. None of the other various remedies suggested and tried has seemed to have any effect whatsoever; and during the latest and most severe attack, no medicine was given at all, except narcotics to alleviate the intense pain.

Requirement: Suggest diagnosis and treatment.

WHAT ABOUT THE UNIVERSE?

When from the human heart the cry goes up, "What is it all about?" it is no true answer to look only at that part of experience which comes to us through certain sensory organs, and reply: "It is about atoms and chaos; it is about the universe of fiery globes moving on to impending gloom; it is about non-computative algebra;" but rather it is about a spirit in which truth has its shrine, with potentialities of self-fulfilments in its response to beauty and right. — SIR ARTHUR EDDINGTON.

THE · CLINIC

SURGERY

Traumatic and Non-Traumatic Cases

By Frank B. Young, M.D., Long Beach, Calif.

MANGLED ARM (INDUSTRIAL ACCIDENT)

B. M., age 46, had his left arm caught in an elevator in a beet-sugar factory, with the result that he had complicated, compound, multiple fractures of both bones of the forearm; the internal condyle of the humerus was completely torn away; and the humerus had a compound fracture midway of the shaft. It looked as if it would be impossible to save this arm but, because of the fact that his right arm had been badly mutilated some years before, this man refused to permit an amputation, saying that he preferred to die rather than to depend on one arm and it crippled.

Under ether anesthesia, all mangled and shredded tissues were cut away from the areas of the compound fractures. The injuries about the internal condyle were repaired by suture. The fragments of bone were brought together, drilled through and sutured in place with kangaroo tendon. The lacerations were very loosely closed with sutures and, where possible, muscle tissues were coapted. Free drainage was used, a wet dressing was applied and the arm was placed in a Thomas splint, with the ring at the shoulder and extension by adhesive plasters over the hand and lower forearm, which held it in good position. He was given anti-tetanus serum.

The arm healed nicely and has regained fully seventy-five percent of its previous usefulness.

Comment: The result in this case shows us that it is possible, in many cases of mangled extremities, to obtain a good functional result. Amputation of this arm appeared to be justifiable, at the time of the injury, but the insistence of the patient and my own conservatism in regard to amputations caused me to make the attempt to save it. It would, of course, have been impossible to save this arm had the large blood vessels been cut.

ABDOMINAL TRAUMATISM

W. S., age 20, was thrown from a horse and trampled by him. Several ribs were broken and there was evidence of severe abdominal injury.

Abdominal section, under ether anesthesia, through the right rectus muscle, showed a laceration of the cecum down to the mucous membrane, just below the ileocecal valve, and a large hematoma at the base of the appendix. The laceration was repaired and the appendix removed, with inversion of the stump, which also carried the hematoma into the bowel. The abdomen was closed without drainage, as there had been no escape of contaminating material.

The postoperative course was uneventful until the tenth day, when we let him sit up. On this day he suddenly developed vomiting, abdominal distention and an increased leucocyte count. A long incision was made on the left side, avoiding

the previous scar, and examination of the abdomen showed intestinal obstruction, due to an adhesive band across the lower end of the ileum. This band was severed and a jejunostomy done. The tube was removed from the jejunostomy opening on the twelfth day and the patient was discharged from the hospital on the twenty-fourth day following the second operation. He has remained well since.

It is necessary, in these cases of acute obstruction, to operate promptly and to be certain to secure complete relief from all obstruction of whatever type. Jejunal drainage is a life-saver in many of these cases. It is a routine with me, in bad cases of general peritonitis where there is marked distention of the small intestine. When the condition of the patient is bad, in a case of peritonitis from any cause, to open the abdomen under a local anesthetic and pick up the first loop of small intestine that presents, opening and draining it, will often gain time to obtain a reaction of the patient, where a more complete operation would prove fatal.

MALIGNANT DEGENERATION OF UNDESCENDED TESTICLE

John C., age 44, was referred to me because of a large tumor in his lower abdomen. The right testicle was undescended and the diagnosis was made of malignant degeneration of this undescended testicle.

Abdominal section, under ether anesthesia, proved this diagnosis to be correct. The tumor was attached to the posterior abdominal wall, near the bifurcation of the aorta, by a pedicle two and one-half inches long and two inches wide and contained many large blood vessels. The tip of the appendix was adherent to the tumor. The tumor was removed and its removal gave one much the impression of operating on a large multilocular ovarian cyst. The appendix was removed and the stump inverted. There were no palpable glands and the liver appeared to be normal when palpated.

The patient made an excellent operative recovery and for about one year remained in good health, after which he developed evidences of carcinoma of the liver. This was treated with deep x-ray therapy by Doctors Wasson and Bouslog, of Denver, with the result that he had a remission of his symptoms; but after about four years he died of metastatic carcinoma of the

liver. Postmortem examination was not obtainable as he died in a mining camp in western Colorado. Histologic examination showed that the tumor was mixed carcinoma and sarcoma.

The interesting feature of this case lies in the fact that malignancy developed in the undescended testicle practically without warning. The organ was well protected in the abdomen and was not subject to trauma. The deduction might be drawn that it is well, in these cases, to remove such organs where possible. The rest of his abdomen and genito-urinary tract appeared to be normal.

SENILE PROSTATIC HYPERTROPHY WITH HEMORRHAGE

John H., widower, age 64, was seen at his home in consultation, because of prostatic hemorrhage. He had suffered with senile hypertrophy of the prostate for many years and had the habit of using a catheter on himself. On this evening, while preparing to go to bed, he introduced the catheter, obtaining two or three ounces of urine, when the hemorrhage started and clots filled the catheter in such a manner as to prevent relief. His family physician was called and could not relieve him. We removed him to the hospital and introduced a small catheter suprapubically through a large trocar and canula opening. In this manner it was possible to relieve the over-distended bladder gradually and, three days later, a suprapubic cystotomy was done under a local anesthetic. It required two months of drainage to make his local and urinary conditions satisfactory for a prostatectomy.

The prostatectomy was started under local anesthesia, with the expectation of finishing under ethylene gas anesthesia. It was found, however, that it was possible to complete the operation under local. He left the hospital on the twentieth day following the prostatectomy and has been in good health for eighteen months since.

The interesting point in this case lies in the fact that it was possible to complete the operation under local anesthesia. It seems that we were able to introduce the local anesthetic in the line of cleavage between the capsule and the prostate to such good effect that he suffered no pain whatever and in such a manner as to make the

(Continued on page 220)

CLINICAL · NOTES AND PRACTICAL · SUGGESTIONS

Be Prepared for Influenza

THERE is reported to be a mild epidemic of influenza in certain parts of the country, as well as in Europe, which may spread throughout the country. Should this occur, it is well to refresh one's memory as to what products are of value in the treatment of this disease.

Socalled "grippe," we always have with us, but whether this is true influenza in a mild endemic form, we do not know. It, however, resembles true epidemic influenza in many ways, but is particularly mild, rarely producing death and usually only incapacitating the patient for three or four days.

Epidemic influenza is a distinct disease; an acute infection, whose cause is unknown. The prodromal symptoms are usually mild and the onset sudden, with or without a chill, immediately followed by a high fever (102° to 105°F.), which lasts for two or three days and then may fall abruptly or decline gradually in two to seven days. The patient is extremely prostrated—an evidence of severe toxemia. This prostration is much greater than the symptoms warrant. Headache, injected eyes, catarrhal symptoms of the upper respiratory passages, backache and general muscular pains are practically always present.

In the respiratory form, cyanosis and a violent, dry, harassing cough are present; the pulse is slow and the blood shows a lessened number of white blood corpuscles (leucopenia).

In the socalled abdominal form, more common now, gastric pain and distress or diarrhea and vomiting are the rule, although constipation is usually an initial symptom

and tympanites is frequent. Severe headache and muscular pains are the common symptoms and are practically always present. In all cases, acidosis is present; frequently insomnia; and there is always a marked circulatory depression.

In typical cases, the temperature drops suddenly about the second or third day. Then follows, usually, a subnormal temperature, accompanied by extreme prostration, and it is particularly during this stage that complications, frequently fatal, result. These complications are due to secondary infections and probably ninety-five percent of the deaths occurring are due to these complications, which may be local infections of the upper respiratory tract, otitis media, sinus infections, bronchitis, tonsillitis, pleurisy and frequently pneumonia, endocarditis, empyema and renal or genitourinary infections. Meningitis and encephalitis are often seen. In addition, many cases succumb to other infectious diseases, such as erysipelas, measles, scarlet fever and even mumps during this stage of prostration.

If, after the temperature has been subnormal for one or two days, there is a gradual rise above normal, beginning usually on the third day, pulmonary or other complications are to be expected. It is, therefore, essential that the patient be carefully watched during the convalescent stage, which is usually prolonged.

The outstanding remedies in the treatment of this disease, in the general sequence of their use, are as follows:

For prophylaxis, influenza bacterin has been shown to be of value, not only in preventing a severe attack of the disease,

but especially in preventing the fatal subsequent complications.

For local application, as a spray to the nose, where the infection originally enters, Metaphedrin or plain Metaphen 1:2,500 is decidedly beneficial.

Calcidin in large doses (5 grains every three hours) is efficient. Simple secondary pneumonia rarely develops following common colds where Calcidin is given early and in sufficient doses. Even large doses of this drug do not ordinarily upset the stomach.

As a mouth wash and gargle, Metoso or aromatic chlorazene solution are advised.

For the fever and pains accompanying influenza, particularly for the pains, amidopyrine, preferably in small doses, is the least toxic of the analgesics at present available. However, it must not be used to excess and must be discontinued as soon as the fever falls and before the stage of prostration begins. Acetylsalicylic acid is contraindicated, owing to its depressant effect upon the circulation. Cinchopyrine may be used and is better. In children, aconitine hydrobromide is best. In addition, Salihexin is probably preferable to other drugs for intravenous administration, although sodium salicylate and iodide are also of value, either without or with colchicine. Some prefer sponging with alcohol to reduce the fever, although it will not relieve pain.

For the headache, when due to sinus involvement, Metaphedrin is often of value; and Metaphen, in a 1:5,000 solution, or Argyn (mild silver protein), 10 percent, is preferable to the commonly used and absolutely inert boric acid solution for application to the eyes.

Nothing is more efficient than a saline laxative as an initial cleansing agent for the bowels. If diarrhea occurs, it may be treated with Calsoma, which is helpful in all such cases, as well as in cases of mucous colitis accompanied by diarrhea. Tympanites is a frequent complication and is best combated by means of pituitary extract and strychnine. If it is present, ephedrine in any form should be avoided.

Vomiting, which is a fairly frequent symptom, is controlled best by Nembutal or by anesthesin and cerium oxalate compound. Nembutal is also of value in the insomnia and frequently aids in controlling the cough.

For the circulatory failure, Digipoten or one of the digitalis-strophanthin compounds

is indicated. To combat the acidosis, which is always present, sodium citrate or Sodoxylin is indispensable.

The harassing, dry, persistent cough is usually not amenable to the ordinary cough syrup, unless codeine is combined with it, although in some cases, if the patient is given Nembutal in addition, it will be relieved. If, however, as is frequently the case, it is due to a laryngeal irritation, troches of anesthesin and Calcidin may be effective, or one-half of one percent Butyn may be sprayed into the throat. For the cough that frequently persists, ethyl morphine and ephedrine syrup is best, but guaiacol cough syrups are exceedingly valuable and should not be forgotten.

During convalescence, stimulants and "tonics" are essential. Of these, of course, we have a considerable number, but I particularly call your attention to A-B-D Malt, haliver oil, the arsenates with nuclein and iron and quinine arsenates, for oral administration. Subcutaneously, iron citrate compound with nuclein is highly efficient, or iron with arsenic and phosphorus; or iron and arsenic intravenously.

I believe that the use of bacterins, Calcidin and particularly Metaphen offers some hope in the prophylaxis, as well as treatment of this disease, and either Metoso or aromatic chlorazene solution as a mouth-wash or gargle, because it is just as essential to guard the oral mucous membrane as that of the nose, if possible.

In addition, Sterilac or chlorazene should be used to disinfect the utensils and linen that come in contact with the patient.

J. F. BIEHN, M.D.

Chicago, Ill.

Good Medical Service and Hard Times

THERE has never been a time in the history of medicine when physicians have failed to consider it their duty to do all they could for the patient's welfare, and at the same time keep the services rendered within the limits of the patient's financial ability to pay. The exceptions to this line of conduct are few.

At this time, when wise and honest patients want a paid medical service, it is very necessary that, in making an examination, the five senses be more diligently employed than ever before; but to depend upon the five senses alone is to treat the

patient unfairly. All doctors know how to make a chemical and microscopic examination of the urine. This service should not be withheld from any patient.

If we are to be fair to our patients who are paying us as much as they can afford, it is our duty to make it clear to them that in many cases other laboratory procedures are necessary to confirm our clinical findings. The laboratories should be willing to bring their prices down to a point that will give them a very small margin of profit. If the patients cannot meet the increased cost of laboratory procedures, we should not allow them to labor under the impression that we are helpless because of a lack of these aids, but should assure them that careful treatment, based on clinical findings, is reasonably certain to restore them to health. If, after a fair trial, we find that our patients are not improving, then it is again our duty to urge that the patient make a financial sacrifice in order to obtain the information that in many cases only laboratory procedures can give.—*Northwest Medical*, Jan., 1932.

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to CLIN. MED. AND SURG.

The Hospital Library*

BOOKS are the foundation of any institution of scientific work. When Yale was conceived, each member brought a number of books, which was his first contribution to the founding of that great university.

Books are the main working tools of the physician's stock in trade. "To study the phenomena of disease without books is to sail an uncharted sea." When the doctor is up against a medical or surgical problem, his salvation will be found by a few precious moments among books. Dr. Harvey Cushing has sagely said, "As a calorimeter tells the activity of a patient's metabolism, so may you determine the plus and minus activity of the local profession in any district by the condition of its library".

It is practically impossible for the busy practitioner to maintain on his own shelves ample current literature which he has indexed and kept in readiness for prompt

reference. A library raises the standard of a hospital, in that it encourages efficiency. Staff meetings are improved immensely, in that the presentation of papers and case reports is usually preceded by study, in order that the presenter may be better equipped to discuss his subject. Certainly each case report should have such consideration. Without a library available, this preparation is generally decidedly lax.

A library is invaluable to the instructors in a nurses' training school, and as a source of reference and collateral study for the intern staff and student nurses.

In order that this valuable phase of any hospital may be made adequate for practical use, it is necessary to procure the services of a librarian. It has been admirably stated that a good librarian is as essential as a good library; and that a poor library can be made valuable under the guidance of a good librarian. Articles desired, if not available from the shelves, may be procured and even abstracted. Reference reading is necessary in the preparation of good medical papers; and the proper material, culled from the enormous volume of medical literature now being published, can only be made available by a librarian.

The library should combine its facilities with those of the case record department. The two should be linked, so that the record files are at hand for statistical use and comparative study. All case records should be well indexed, and material from the files always available on request. These conjoined departments should offer practical assistance in one's effort to improve one's practice.

L. E. DAY, M.D.

Chicago, Ill.

The Prevention of Simple Goiter

THE EASE and simplicity with which goiter prophylaxis is accomplished has nearly been the undoing of this very valuable procedure. Many persons with goiter, attracted by the apparent ease with which the malady may be prevented, have concluded that what is useful for prophylaxis of the simple form is likewise efficient as a means of treating all types of the disease. Much harm has been done by this erroneous assumption. It is necessary, therefore, to caution people that there are certain goiters which are made worse by the ingestion of iodine. Moreover, the measures that may be effective in prevent-

*Read at the 3rd annual meeting of the Ravenswood Hospital Medical Library Association. June 2, 1931.

ing simple goiter are in no wise useful in forestalling other and more severe forms of the disease.

The following questions quite naturally arise regarding simple goiter: First, why should simple goiter be prevented? Second, is the condition more than a deformity of the neck? These reasonable questions may be answered by citing the experiences of certain foreign countries in which the disease prevails unduly. When unchecked, simple goiter is often associated with mental and physical degenerations, especially deaf-mutism, feeble-mindedness and the idiocy of cretinism. The ill effects of uncontrolled goiter are particularly severe in subsequent generations. Fortunately, the affection has not reached this degree of intensity in the United States, nor is it likely that it will reach it.

The causes of simple enlargement of the thyroid gland may be conveniently classed as immediate and remote. The immediate cause of this condition is now believed to be a complete absence or marked deficiency of the iodine necessary for the normal functioning of the gland. Anything which interferes with the intake or utilization of iodine available in normal quantities may likewise cause enlargement of the organ. Thus, infections, intoxications, faulty diets and such periods of stress in female life as puberty, pregnancy or the climacteric, may be mentioned as remote or underlying causes of simple goiter. It is a matter of common knowledge that females are more prone to simple goiter than are males.

The most satisfactory method of administering iodine for the prevention of simple goiter is by *adapting the remedy to each person in need of it*. In this way accurate dosage and nominal supervision is insured. Obviously this method is costly and cumbersome, reaching only a small portion of those requiring the protection. In order to overcome these objections, wholesale prophylaxis by the use of iodized table salt and iodized water supplies has been suggested. While both of these methods are theoretically sound, it is not yet definitely known whether they are effective and, at the same time, incapable of causing harm to persons with existing goitrous enlargements. Therefore, the individual method is preferable at the present time.

It is likely that the regular consumption

of foods naturally rich in iodine will aid in preventing goiter. It is known, for instance, that marine algae, deep sea fish and crustaceans are particularly rich in iodine. But here again, the uncertainty of dosage and economic factors are involved. Variations in the iodine content of food and water probably account, to a considerable extent, for the differences in goiter incidence in the United States. Until more definite knowledge becomes available concerning the value of iodized salt, iodized water and iodized foods, it appears best to individualize in goiter prophylaxis.

Goiter prophylaxis is most telling in its effects among children between the ages of 11 and 17, especially among girls. Even more important is the institution of appropriate prophylaxis *before a person is born*. Under the supervision of a skilled physician, a prospective mother may receive protection, not only for her own thyroid, but also for the gland of the expected child. Any plan, therefore, that safeguards the thyroid gland during fetal life, adolescence and pregnancy may confidently be expected to aid in eliminating simple goiter; but self-drugging with iodine is dangerous and should be shunned.

U. S. PUBLIC HEALTH SERVICE,
Washington, D. C.

Social Insurance

DURING the past summer I had an opportunity to travel with a large group of Rotarians to the international convention in Vienna. While enroute and in the various European countries, much opportunity was given to get some first-hand information relative to the manner in which insurance against the ills of the flesh and the inadequacies of our economic set-up might be working out.

It would appear that individuals who do not balance their budgets are early reminded to do so, or they find themselves in impossible situations. Not so with most governmental units! First they borrow to tide them over an immediate difficulty; then they borrow some more for disasters unforeseen, and finally break down when attempting to borrow to pay interest on their obligations; then the lenders find that the jeopardized credit has destroyed the security value.

Those who discussed the dole with us, either in England or Germany, began by

praising its abstract purpose, but condemning its practical application. This would appear to be an attribute inherent in anything attempted governmentally on a broad scale. Apparently we are not civilized enough to refrain from being both unfair and avaricious when our individual acts work hardship and havoc and the immediate impact of such acts is lost in the labyrinthine detail of either big business or bureaucratic government. Within this devious cavern of hopeful, but inexpedient, governmental groping, lies a great danger of disrupting individual initiative and individual responsibility.

We are indeed groping to maintain that attitude and relationship in medicine. On the whole, it would appear that, while the present results are not perfect, we have gone a long way toward giving service in America to all classes on a reasonably fair and equitable basis. The average American with his family, if he knew the conditions in his own home and those in the best of European countries, would prefer the American set-up, imperfect though it may be. Accordingly I feel that it is only just and fair that we should ask the average American citizen to support us, even as we ask them to support our banking system, and let us all try to work out a just and equitable set of systems, based on the needs of our various communities and states and the potentialities of our great country.

E. L. TOUHY, M.D.

Duluth, Minn.

Taking the Bull by the Horns— While He is Still a Calf*

BULLDOGGING" a Texas steer makes an exciting episode at a rodeo, but most of us prefer tiddly-winks as a form of exercise. If I had to take a bull by the horns and see which of us was the "best man," I'd much prefer to do it while he was a wobbly calf, and you must admit that there's plain horse sense in my contention. The best time to stop a fire is before the dining table and the baby-grand piano fall into the basement; the time to prevent a flood is while the leak in the dike is a mere trickle.

The best cure for typhoid fever is not to have it. Taking the little trouble to pasteurize the milk may save the big trouble

of being the center-piece in the floral display at the undertaking parlors. A typhoid bug don't amount to much by himself, but you just let him raise a family in your insides and then see what he amounts to!

Tuberculosis that has become rather far advanced will almost certainly end in death or some considerable disability. The long, expensive course of the disease and the loathsome nature which it so often assumes makes it feared as are few other ailments. But there is no need to let it get to an advanced form. If the diagnosis is made at an early date, probably few other diseases are so easily cured. It may seem surprising but it is true that nearly all adults in this country have at some time had tuberculosis, and most of them have recovered from it without ever knowing that they have had it. That doesn't sound so bad, does it? The patient who is losing weight, gets tired too easily, has no pep, has an afternoon fever, or any of the other well-known signs of early tuberculosis, will be doing mighty well if he will go to his physician, give all of the facts, and have an examination. These little symptoms may seem trivial, but they can grow, and it's better to take the bull by the horns before he has horns, if you will forgive the paradox. Good nutrition, hygienic living, early diagnosis and scientific treatment are the reasons why the tuberculosis rate is rapidly falling.

Cancer of every sort is small before it is large; it is always local before it is general; it is nearly always operable before it is inoperable. If the diagnosis of cancer is made while the growth is small and local, taking the calf by the horns is a simple and safe procedure; if, however, the patient does not come to the doctor until the cancer is far developed, taking the bull by the horns is quite a different matter. A lump in the breast, unnatural bleeding from the uterus, a sore on the lip that does not heal, and a lot of other symptoms that will make another story sometime may seem innocent enough, but we must remember that it was only the little flame in Mrs. O'Leary's lantern that set Chicago afire.

There are two ways of handling diseased tonsils: First, by having them out when there is reason to believe that they may be causing trouble, and then forgetting them; second, leaving them in until they have damaged the heart, infected the ears, and injured the kidneys and then never being able to forget about the damage that has been done.

*Reprinted from *Bul. Indiana State Bd. of Health*.

If a tooth needs repair it is well to remember that cavities never get smaller and less tender. There is hardly a medical or surgical procedure than can be mentioned—and many of them are quite drastic—but that might have been cared for in a little bit, if it had been taken in time. The patriotic dogma, "Millions for defense, but not one cent for tribute," in ordinary life runs, "Millions for treatment and not one cent for prevention," and in the latter connection at least is mighty poor business.

Jerry and Sallie were feeble-minded, but just the same they knew enough to want to get married. The community had some misgivings about the match, but didn't want to stir up a fuss about it—possibly causing hard feelings. "Oh, it may turn out all right," they professed to believe. "Maybe they can sort of take care of each other and we won't have them to take care of." Now, fifteen years later, besides Jerry and Sallie, there are eight children, the older ones of which are already a great problem to the community and getting worse day by day. It won't be long now until the older ones will be grown up and the community will let them marry others like themselves—of course, no one else would marry them. It's too bad to bust such a charming little romance as two half-wits can cook up, but such families are going to bust up society if we don't come out of the haze and do something about such business. It's merely a matter of taking the bull by the horns—in this case by not letting him be born.

Practically the entire health program is one of urging the public to sneak up on its troubles when they—the troubles—are asleep. Medical science has reached such a stage of development that it can prophesy with a great deal of accuracy where the trouble is liable to break out. If you have a shallow well with a loose board covering; if you have a ramshackle old privy open to flies and chickens and pigs; if you are careless about the milk; if the flies swarm about your place, it doesn't take a prophet inspired of Heaven to predict that some of these days you are going to have a visitor in the form of a typhoid or dysentery germ. Of course, you haven't time to fix them up just now, but you'll take time to have the fever when the germ moves in.

If ever I go to Spain or Mexico, I'm going to see a bull-fight. Furthermore I'm going to root for the bull. Imagine a bunch

of people bringing up a bull with horns two feet long, when they might have sold him for veal when he was six weeks old. It may be sport, but it isn't good judgment, and that's that! Discretion is still the better part of valor, and an ounce of prevention is worth several carloads of cure.

THURMAN B. RICE, M.D.

Indianapolis, Ind.

How to Make Rubber Sheeting Last Longer

RUBBER wears out in use and in storage. So, the service you get from your rubber sheeting depends upon the care you give it, in use and in storage.

Here are ways to make it last longer and give better service:

Storage Rules

- 1.—Sheeting, when stored in rolls, should be kept on a rack and not stored on end.
- 2.—It should be stored in a cool, dark place, away from heat or radiators.
- 3.—Individual sheets should never be placed in storage unless thoroughly dry.

Use Rules

- 1.—Never attempt to dry rubber sheeting by putting it near a radiator or excessive heat.
- 2.—It should never be exposed continuously to the direct rays of the sun.
- 3.—Avoid overheating during sterilization.
- 4.—Oil has a harmful effect on rubber. Therefore, when it is necessary that oil come in contact with the rubber surface, it should be washed off as quickly as possible with soap and water.
- 5.—When a liquid sterilizing solution is used, the sheeting should be thoroughly washed and dried before being placed in storage. It is always advisable to dust the sheeting with talc after sterilizing or washing.—*American Stories*.

The Title of Dentist in Austria*

IN NO country are the regulations affecting the practice of medicine, and the specialties pertaining to it, more strictly defined than in Austria, and the Board of Education has recently made it clear that the title of dentist is restricted to persons

*Note on dental conditions in Austria, Editorial, *British Dental Journal*, LI:490, May 2, 1930.

who have qualified as medical practitioners, and have subsequently been trained for two years at a dental clinic and passed a specified examination in dental subjects. It follows that, while every dentist must first of all be a medical practitioner, the graduate in medicine has no right to the designation, although he may undertake treatment of the teeth and associated parts in the course of his duties as a general practitioner. It is also significant of professional opinion in Austria that the dentist's work is restricted to the specialty he has chosen, and he may not engage in other branches of surgery.

ALFRED OWRE, M.D., D.M.D.

New York, N. Y.

Don't forget "Who's Your Health Banker?" Send for your copy. It will build your practice.

The Psychopathologic Effect of Sodium Amytal

OUR studies show that sleep and narcosis are not necessary conditions for the production of the mental changes discovered by previous authors as the result of sodium amytal injection. In normal individuals the drug produces a mild euphoria and a release of the inhibitions and reserve which usually prohibit the individual from communicating about matters of emotional significance. The same mechanism seems to be at work in psychotic patients, where it makes possible communications of the thought content, inaccessible to the usual means of clinical approach.

The value of the method described, for diagnosis and for psychopathologic investigation of psychiatric conditions, seems to be established. The effect of sodium amytal in this respect is similar to that of cocaine, which was used by Berger, in Germany. Amytal is to be preferred, because it does not seem to have any undesired concomitant effects. The therapeutic influence of the drug does not seem to be specific. It allows a period of emotional rapport with the patient and gives access to thought material which can be utilized for subsequent psychotherapeutic effects.

It seemed indispensable to study the

effect of the same doses as used in psychotic patients, with normal individuals. Sodium amytal crystals, dissolved in distilled water to a 1 gr. (65 mgm.) in 1 cc. solution, were injected intravenously. One grain (65 mgm.) was injected during the period of a minute. The injection was stopped as soon as the patient showed the first signs of psychologic change. The administration of 3 to 4½ grains was sufficient to produce the change which we wanted to study.

Twenty-four (24) patients and 4 normal individuals were used as subjects. The normal individuals were one staff member of our hospital and 3 graduate students, accustomed to making introspections. In all subjects we found certain neurologic changes, such as speech defects of the parietic type, nystagmus, a disturbance of eye muscle coordination, and a mild degree of ataxia. There was also an increase in the threshold for pain stimuli, as well as for smell and taste stimulation. There was the objective appearance of mild fatigue, without any subjective signs of it.

As a whole, the picture was of mild euphoria with rapid flow of associations, but no increase in psychomotor activities. —ERICH LINDEMANN, Iowa City, in *Proceedings of the Soc. for Exper. Biol. and Med.*, June, 1931.

Social Insurance*

Most Governments Are Inefficient or Corrupt: Some Are Both

ONE of the very first questions that naturally arise is: Have any of our governmental agencies so conducted themselves in the past as to make it reasonably safe for us to entrust so stupendous a function as universal social insurance to any branch or department? I maintain that most of our local as well as state governments are inefficient or corrupt, and some are both.

Let any one who doubts the correctness of this statement spend a little time to look around with a critical eye and observe how most local governments, the various departments of the state in which he lives, and the departments of the federal government are conducted, and I am convinced that he will find more inefficiency than he has ever dreamed could exist. If he does

*This is the third of a series of articles on Social Insurance.—Ed.

not personally know of corruption and inefficiency in government, let him but scan one single daily newspaper regularly for a month in order to be convinced. What else can one expect, who is at all familiar with politics as it has been played and managed in these United States in the year 1931—the manner in which most men secure their nominations and later their elections, and to whom they are beholden when they take office?

We have all seen the statement repeatedly in the public press, but have never seen it successfully refuted, that, in many of the political subdivisions of our country, only sixty percent of the taxes collected are effectively spent, the remainder being frittered away, wasted or stolen. This inefficiency and corruption are due to many causes, of which some of the more important are:

The fact that, so far, no formula has been discovered, according to which the most efficient, honest, industrious and worthy members of the community can be secured for public office; nor has there been any method devised whereby spoils politics, favoritism, pull, nepotism, waste and graft can be eliminated with even a reasonable degree of certainty. The individual who could solve these two problems would, not only be the greatest benefactor of the human race, but the wisest man the world has so far produced.

Plato tried to solve this problem twenty-three centuries ago when he wrote his "Republic." For a time he actually thought he had found a solution. He prevailed upon the King of Syracuse to adopt his plan and put it into operation. The King tried it for a while, tired of it and sold Plato into slavery. Some good friends ransomed him. After that he was not so sure that his scheme would work in practice. Things are not much different today than they were in the time of Plato—only worse. Worse because of the increase in population, resulting in larger governmental units; the enormous increase in the number of those exercising the franchise; the increase in the percentage number of ignorant voters; and the ever-increasing astuteness and finesse of our practical politicians.

Inefficiency and corruption are so common that we have become callous to them. We are annoyed about them, we grumble and complain mildly about them, we pay our ever-

mounting taxes (if we have anything with which to pay) and "let it go at that."

The best illustration of governmental muddling in general is to be found in the mess most governments of the world have made of themselves during the past twenty years. As examples, we need but call attention to the virtual bankruptcy of Germany and of Austria, the maladministration in Russia, the revolutions in Spain, China, Central and South America, the dictatorships in Poland and Italy and, when we come nearer home, the general lawlessness in the United States, with its murders and kidnapping for ransom; conditions in the city of New York as disclosed by the Seabury Investigation; the virtual bankruptcy of Chicago and Philadelphia; and the near-bankruptcy of many other governmental units.

Let us study conditions in our own country a little more in detail, in order to determine whether it would be wise or even safe to entrust the federal, state and local government, or any one of them, with supervision over the private lives of its citizens.

EDWARD H. OCHSNER, M.D.

Chicago, Ill.

Send for your copy of "What About Heart Diseases." Educate your patients.

Bismarsen Technic

IF a change of route from the intravenous, in the administration of the arsphenamines, is advisable, Bismarsen is the preparation of choice.

How to dissolve the powder: Aspirate the Bismarsen solvent through a needle into a 2 cc. sterile syringe; file the neck of the Bismarsen ampule and move the contents, gently rotating it; snap off the filed neck and inject the solvent from the syringe on the Bismarsen. The powder will float and slowly dissolve. To hasten the process, aspirate the fluid to and from the syringe, using care not to pump air into it, or stir with sterile glass rod.

Where to inject: Use a dry needle for the injection (20 gage; 2 inch length), not the needle that has been used to draw the solution into the syringe, because, in the latter case, part of the drug adheres to the needle and enters the superficial tissues near the site of the injection, frequently causing pain and nodules, brought about

by the inability of these tissues to absorb the medicament.

The outer and upper quadrant of the buttock is the most suitable place. Avoid residual infiltration, due to previous treatments.

Paint the selected spot with tincture of iodine and firmly grip it with the left hand; thrust the needle in; connect the syringe; aspirate, to make sure that a blood vessel has not been entered; inject slowly; disconnect the syringe and then inject 1 or 2 cc. of air; withdraw the needle rapidly; massage for a few minutes; seal with adhesive plaster, instructing the patient to remove it the following night.

E. CIRINCIONE, M.D.

New York City.

Original Method for Estimating Thyrotoxicosis*

A NORMAL man has a capacity for holding his breath far beyond the usual need, and the ability of some, in this direction, is far beyond the ordinary. At the upper end of this scale we have the pearl diver and the opera singer, and at the lower end the thyrotoxic patient.

Only persons with excellent physical capacity can hold the breath for more than one minute, after a deep inspiration. There are three factors in this ability: (1) physical capacity; (2) training; (3) self-control. The normal period after inspiration is 45 seconds, and after expiration, 25 seconds. Self-controlled people, with good physical capacity, might increase this to 60 and 30, or even to 72 and 34 seconds.

In hypertension cases the inspiration (denominator) and the expiration (numerator) figures are both decreased, the numerator slightly more than the denominator; in obesity and anemia, the numerator decreases still further and, in cardiac decompensation, even more. In thyrotoxicosis the numerator decreases almost or quite to the value of the denominator, sometimes reaching 12/10 or even 5/5 (the lowest yet reported).

This test is easy to make in the office, but must be repeated many times, in order to arrive at a reliable average figure.

The criteria for operability in thyrotoxic patients are a satisfactory condition of: (1) Circulation; (2) nutrition; (3) metabolism; (4) excretion; (5) self-control; and (6) duration and volume of respiration.

The first six weeks of treatment should be devoted to training and rehabilitation of the patient; then the operation (which is a small part of the cure) should be performed; then a year should be spent in obtaining and maintaining normal bodily functions.

WILLARD BARTLETT, M.D.

St. Louis, Mo.

(Continued from page 211)

prostate exceptionally easy to remove.

It is a generally accepted fact that the use of spinal anesthesia or sacral block is desirable in prostatectomies, but this old gentleman absolutely refused to have anything injected into his spinal canal, so we began the operation with the expectation of proceeding as far as possible with the local and then using ethylene gas, and were surprised to be able to complete the operation with the local anesthetic.

525 Security Bldg.

*Abstract (by P. M. K. and G. B. L.) of a talk before the Southern Medical Association, Nov., 1931.

PSYCHIC SCIENCE

Science, in the final analysis, is nothing but the process of discovering what given results follow a given set of causes . . . "Proofs" of anything scientific or sensory consist of nothing more than getting the same results under the same given set of conditions.

In psychic science this is being done!

—WILLIAM DUDLEY PELLEY, in *New Liberator*, April, 1931.

THE · LEISURE · HOUR



PATIENT:—"AFTER READING THOSE NEWSPAPER ARTICLES I AM SURE THAT I HAVE A CUTE ATTACK OF 'ENGINE PICTORIALS.'"

DOCTOR:—"PERHAPS YOU HAD BETTER LET THE EDITOR PRESCRIBE FOR YOU."

A Terrible Deficiency*

When a mother beats her darlings
With a length of iron fence;
When she shows for them a hatred
Unremitting and intense;
When her mother love quite clearly
Is in constant state of freeze,
It just indicates that mommer
Hasn't had her manganese.

When a little baby's crooning
Makes mamma a little sick
And she loves to flog the kiddies
With a barrel stave or stick;
When an infant's cry of "Mother"
With her nature disagrees,
Don't be startled, for it's nothing
But a lack of manganese.

When she takes to dragging junior
'Round the household by his hair
And delights in chasing Dolly
With a table leg or chair;
When she screams in abject terror
As her babe climbs on her knees
It's significant of nothing
But a need of manganese.

When the patter-patter-patter
Of the footsteps of a child
Makes a mother scream in anger
And seem savage-like and wild;
When she drives them from the indoors
And insists they sleep in trees,
It is just a symptom showing
She is off her manganese.

When she loves to starve her offspring
And sticks needles through their ears;
When she feeds them only spinach
And cries "Brats" to all the dears;
When she tells them there's no Santa
And says "Bah!" to Christmas trees,
Bear in mind she's just a mother
Who's deprived of manganese.
—H. I. P. in *St. Louis Globe-Democrat*.

If he goes up on the stage when the
magician asks for helpers, you can always
sell him raffle tickets.—*Fountain Inn Tribune*.

* (Mother love is due to manganese in her diet and its absence causes it to disappear, says Dr. Elmer V. McCollum of Johns Hopkins University.—*News Item*.)

Fortunate Ignorance

Young man (dancing with very attractive young lady): "Do you know that sap, the manager? He is about as dumb an egg as I ever saw."

Young lady (gradually finding her voice): "Young man, do you know who I am? I'm the manager's wife."

Young man: "Oh — oh — do you know who I am?"

Young lady: "No."

Young man (leaving hurriedly): "Thank Heaven for that!"—*Medical Suggestions*.

The Mystifying Cocktail

"Ze Americaine he is ver' funny. Ze Frenchman can nev' understand heem—jus' like ze Americaine cocktail. Firs' he put een whiskey to make ze drink strong, zen he put in water to make her weak, zen he drop in some sugar to make her sweet, nex' he put in lemon to make her sour, zen he say 'here's to you' an' he dreenk her he'self!"—*Medical Suggestions*.

Necessary Organ

"Doctor, is it true that we can live without the appendix?"

"Yes, the patient can—but to surgeons it is indispensable."—*Medical Suggestions*.

A Natural Question

The nice old lady passed the new dyeing and cleaning establishment for the first time, and it was so large and so modernly equipped that it made quite an impression on her. She decided to go in and look around, if she might—and the proprietor was delighted to have her. In fact, he gave her a personally conducted tour through the plant, taking her everywhere except in one room which, he said, they had better not go in.

"There are several dyeing vats in there," he explained.

"Oh, what a pity," exclaimed the nice old lady. "Of course we shouldn't bother them. But have you sent for a doctor?"
—*Pharmaceutical Advance*.

THUMBNAIL · THERAPEUTICS

Metaphen and Its Clinical Applications

The synthetic organic mercurial Metaphen, discovered by Raiziss in 1923, owing to its high bactericidal and bacteriostatic power and the fact that it does not precipitate proteins, has a wide range of application in many branches of medicine—in surgery, obstetrics, dentistry, otolaryngology, ophthalmology, urology, etc. The usefulness of Metaphen is further enhanced by the fact that it exists in several forms, such as aqueous solution, oil-soluble Metaphen and tincture of Metaphen, so that individual conditions are more readily dealt with. — DRS. G. W. RAIZISS and M. SEVERAC, of Philadelphia, in *Internat. J. Med. & Surg.*, July, 1931.

Epinephrin in the Treatment of Hemoptysis

In 14 cases of hemoptysis in pulmonary tuberculosis, good results were obtained from endotracheal injections of adrenalin (epinephrin). A dilution of 1 cc. of a 0.1 percent epinephrin with 2 cc. of water is recommended, the 3 cc. constituting one injection. Two injections within each 24 hours for 2 days, then one injection per 24 hours for next two days, has been found to suffice.—DR. M. LUCACER, in *Polclin. Rome, Sez. prat.*, Oct., 20, 1930.

Treatment of Urethral Stricture

The following technic has been found very satisfactory in the treatment of tight urethral stricture:

Fifteen minims of epinephrin are added to one-half ounce of four-percent procaine solution and the mixture injected into the urethra, carefully forcing some of it through the strictured area, where it is retained for fifteen minutes. If there has been recent instrumentation, sterile water

should be used to dilute the epinephrin, as the procaine may be rapidly absorbed from a traumatized urethra. The urethra is later filled with sterile olive oil and the penis held up, so that all of the oil does not escape.

Filiform bougies are now introduced, one after another, and careful search is made for the opening. Sometimes, if they fail to pass, it is well to depress the penis and try again, as this may direct them toward the opening in the urethra.—DR. JOHN W. VISHNER, Evansville, Ind., in *M. J. & Record*, Jan. 21, 1931.

Thiocyanates in Hypertension

Out of 25 patients with clearly determined hypertension, in the Peter Bent Brigham Hospital, Boston, only 2 reacted favorably to the administration of sodium thiocyanate, and even in these 2 the reaction was not particularly striking or different from that seen in many patients who have had no treatment whatever.—DR. W. C. EGLOFF and associates, of Boston, in *J.A.M.A.*, June 6, 1931.

Don't forget "Who's Your Health Banker?" Send for your copy. It will build your practice.

Viosterol in the Treatment of Psoriasis

In *New York St. J. M.*, July 15, 1931, Dr. S. Monash, of New York, reports that during the past year he has been combining the use of viosterol (irradiated ergosterol), 15-20 drops daily, with the usual ointments in the treatment of psoriasis, and has been much pleased with the results. The lesions seemed to involute at a faster rate than under ointment therapy alone.

As an adjuvant in the treatment of this stubborn and widespread disease, especially in those cases which are benefited by sun-

light or ultraviolet rays, the use of viosterol can be recommended. No untoward results were noted from its use in the dosage given over some months.

Educate your patients. Your copy of "What About Heart Disease?" is ready now.

Calcium in Pruritic Skin Affections

Calcium gluconate was used in 20 cases of itching dermatoses, with good results. The best results were obtained in conditions due to chemicals used internally or externally. The most efficacious method of employing the drug is by daily injections of 10 cc. of the 10 percent solution.—DRS. J. G. DOWNING and A. BLUMENFELD, in *New England J. Med.*, Feb. 5, 1931.

Keep Smallpox Vaccine Cold

Smallpox vaccine should be kept cold—the colder the better! Icebox refrigeration is not sufficient to retain its potency and, as it is not injured by freezing, it should be kept at a temperature well below the freezing point. Even one day out of cold storage may cause a demonstrable loss in its potency.—LT. COL. A. P. CLARK, M.C., U. S. A., in *Hosp. Bul.*, No. 3, 1931, Ft. Sam Houston, Texas.

Shock in Rattlesnake Bite

The severe shock accompanying the rapid hemolytic action of rattlesnake venom should be combated by immediate transfusion, if the blood can be matched and typed rapidly.—DR. M. L. CRIMMINS, in *Texas St. J. Med.*, Oct., 1930.

Immunization Against Tetanus

A patient sustained a very extensive laceration of the hand, the wound being badly soiled with ditch dirt. The wound was cleansed and drained, and 1,500 units of antitetanic serum were injected, subcutaneously, within two hours of the injury. Subsequently, one of the fingers had to be amputated. Twelve days after the prophylactic dose of serum, the patient developed tetanus and died, in spite of an intramuscular injection of 50,000 units of antitoxin and an intraspinal injection of

a like amount.—DR. THOS. W. WOODMAN, in *Southwestern Med.*, Dec., 1930.

[Live tetanus bacilli can become encapsulated and temporarily harmless. If the wound is disturbed, they can begin their activities again, as they would in a fresh wound. It seems a reasonable precaution to give a prophylactic dose of antitetanic serum every week until the suspicious wound is entirely cleaned up. It should certainly be given if the wound has to be reopened.—Ed.]

Therapy of Corneal Infections

There can be no doubt that 80 percent of severe corneal infections could be prevented by attention to only two things: the proper care of foreign bodies on the cornea and the cure of chronic infections of the lachrymal sac. We know that nearly all cases of chronic dacryocystitis harbor pneumococci or streptococci in their sacs and that the slightest injury to the vascular cornea, in the presence of these organisms, is apt to develop into a severe serpent ulcer.—DR. S. R. GIFFORD, of Chicago, in *Illinois M. J.*, Feb., 1931.

Ephedrine in Asthma

All physicians are acquainted with the therapeutic employment of ephedrine inhalant (Swan-Myers), in relieving the distressing symptoms of hay fever or acute rhinitis, the solution being sprayed into the nasal passages with an atomizer, or more commonly instilled by means of a dropper.

A new use for ephedrine inhalant is in the treatment of asthma. If, at the beginning of an asthmatic attack, the pharynx is sprayed by means of an atomizer with the solution, the attack will be aborted.—R. S. MACARTHUR, M.D., Los Angeles, Cal.

Otitis Media

In otitis media the treatment of the throat and nasopharynx is of almost as much importance as the treatment of the ear itself. This is particularly true in the case of infectious diseases and in the presence of large masses of infected adenoid tissue in the vault of the nasopharynx. It is best to use one of the colloidal silver preparations or an aqueous antiseptic of

of the nature of Metaphen.—DR. C. E. HARNER in *California and Western Med.*, Mar., 1931.

Send for your copy of the 1931 INDEX to CLIN. MED. AND SURG.

Gonorrheal Arthritis

When acute gonorrheal arthritis begins, the urethral discharge stops. Inject a 1-percent solution of magnesium sulphate into the urethra to start it again, thus draining the seminal vesicles, and the joint will improve.—DR. J. W. TORBETT, Marlin, Tex.

Ethylene Anesthesia

In my experience, ethylene and oxygen, without supplements, are practical for 90 percent of all surgical operations and nearly 100 percent of obstetric cases.

Ethylene is the nearest to the ideal of general anesthetics for southern climates, in surgery and obstetrics. It seems to have been especially created for the South.—DR. J. T. NIX, New Orleans, in *Anesth. & Analg.*, July—Aug., 1930.

Injuries to the Eye

A blow of sufficient force to rupture the capsule of the lens, either anteriorly or posteriorly, will be followed by a traumatic cataract.

In the case of a "black eye" painting the lid with guaiacol often helps to give a normal appearance, temporarily, by blanching the skin and thus obscuring the discoloration.

In the treatment of traumatic iritis, the first essential is dilatation of the pupil. Atropine sulphate solutions, of the strength of two grains to the ounce, should be instilled every half hour until the pupil is dilated.—DR. D. T. ATKINSON, of San Antonio, Tex. in *Eye, Ear, Nose and Throat Monthly*, July, 1930.

The Barbiturate Anesthetics

The barbiturates and Avertin do not replace the anesthetics we already have, except in a very limited way. They should not be spoken of as anesthetics, because so deficient in proper analgesia and relaxation. The most satisfactory general

anesthetic is compound; compounded of sedative or hypnotic drugs, such as morphine, the barbiturates or Avertin; an analgesic such as nitrous oxide; a relaxant such as ether, when necessary; and such correctives as oxygen, carbon dioxide, ephedrine or caffeine, when indicated.—DR. W. W. DILL, of Norristown, Pa., in *Anesth. & Analg.*, Sept.-Oct., 1931.

A New Throat Anesthetic

Euphagin tablets are a particularly serviceable substitute for narcotics in mouth and throat surgery. Euphagin lozenges were originated by Dr. Haslinger, of the Hajek Clinic in Vienna. They are described as non-toxic and consist of amido-benzoic ethylester with menthol and sodium borate. The author has used these tablets routinely for several months and has not observed any untoward secondary effects.—DR. H. P. SCHUGT, in *M. J. and Record*, Nov. 4, 1931.

"Irregular Uterine Hemorrhage" Treated by Female Sex Hormone

Through the hypodermic injection of an aqueous, estrus-producing hormone, extracted from the placenta, it was possible to control "irregular uterine bleeding" in about 25 out of 31 women. Thirteen (13) of these 25 successfully-treated patients were eased into their climacteric and the other 12 have had their irregular uterine bleeding changed into what resembles normal menstruation for from 2 to 6 months.—DRS. M. T. GOLDSTINE and S. J. FOGELSON, of Chicago, in *Am. J. Obst. and Gynec.*, April, 1931.

The Treatment of Schizophrenia

I have come to feel that the personality qualifications of all those with whom the acute schizophrenic patient comes in contact should be the primary consideration in any attempt to achieve good results from treatment. It has been demonstrated again and again that a great deal of good work is easily ruined by even brief contact of the patient with unsuitable personnel. This consideration often dictates the limitation of visits to relatively neutral and intelligent friends only, during the acute stages of the illness. This sort of segregation, with restriction of the contact of the pa-

tient to highly qualified personnel, in a receiving service to which he is sent immediately on admission to the mental hospital, seems to be a very promising step toward the conservation of these patients.

—DR. H. S. SULLIVAN of New York, in *M. J. and Record*, Jan. 7, 1931.

Syphilitic Pregnant Women

The treatment of syphilitic women during pregnancy should be carried out with an arsphenamine product, plus bismuth or mercury and potassium iodide, precisely as if the patient were not pregnant . . . Occasionally, when arsphenamine is given very late in pregnancy, labor will be precipitated, but early abortion or miscarriage need not be anticipated.—DR. J. E. MOORE, in *Vener. Dis. Information*, June 20, 1930.

Impetigo Neonatorum

An experience based on the observation of between 1,000 and 1,500 new-born infants annually, in the Brownsville and East New York Hospital, leads to the following methods of prophylaxis of impetigo neonatorum:

As soon as the eyes are cared for in the delivery room, the infant is sent to the floor nursery. Here it receives its only washing with soap and water during the sojourn in the institution. Following the removal of vernix and blood by this washing, the infant is "larded" thoroughly with a 3-percent ointment of ammoniated mercury. The orders are given to rub the ointment in, not on the skin. All subsequent care of the skin consists of a daily thorough inunction with sterile mineral oil. When diapers are changed, the invariable rule is to wipe off the parts with absorbent cotton and sterile oil, without water.

The smallest skin lesion is reported immediately to the resident or visiting pediatrician. Every case of pyoderma, however simple, is regarded as a potential case of impetigo, isolated, and the suspicious lesion or the whole body anointed with 3-percent ammoniated mercury twice daily. If new lesions do not appear in three days, the infant is returned to the nursery.—Editorial in *Pediatric Bull.*, N. Y., Oct., 1930.

Glaucoma

Cases of chronic glaucoma should not be operated upon at once. They should be watched and the usual miotics used until there is positive evidence that the case is progressing. If so, an operation, preferably of the trephine type, should be employed. A full medical trial should usually be given before operation. During this period every function of the body should be investigated to find and treat the underlying cause.—

DR. W. H. SNYDER, of Toledo, in *Ohio St. M. J.*, Nov., 1930.

Anesthesia of Children

The administration of gas and oxygen to children requires careful pre-medication, as much as or perhaps more than, is required for adults.

The best sedative for small children and babies is probably codeine.—DR. W. E. MARTIN, of Toronto, in *Canadian M.A.J.* Nov., 1930.

Injection Treatment of Hemorrhoids

For patients who do not want to undergo operation, injection of hemorrhoids with a 5 or 10 percent carbolic acid dissolved in almond oil may be used. Of this about 10 minims are injected into the base or highest point of the pile, as a rule, injecting not more than two hemorrhoids at each visit. Four or five such injections usually suffice. They may also be employed in cases of anal fissure.—DR. H. JACKSON, Middlesex Hosp., Lond., in *Practitioner*, Nov., 1930.

Gas Anesthesia in Dentistry

I have found in my practice, confined to extraction of teeth and oral surgery, that gas-oxygen anesthesia, sometimes with and sometimes without a vapor synergist, in the vast majority of cases is to be preferred to local anesthesia. The recent studies and advances made in the administration of gas-oxygen anesthesia have made it possible to obtain a smooth narcosis, with an addition of sufficient oxygen to avoid cyanosis, both in the anemic and in the full-blooded.—DR. J. D. GOLDMAN, of New York City in *Dental Outlook*, April, 1931.

Current · Medical · Literature

Subdural Use of Antiseptics

Conditions arise in which the subdural injection of an antiseptic would be a valuable procedure, but few chemical substances are suitable for such use.

In *Archiv. Pathol.*, Nov., 1931, A. Levinson and M. A. Perlstein report the results of experiments upon dogs using the two antiseptics which have probably been most widely employed intravenously—Mercurochrome and Metaphen.

They find that Mercurochrome is bactericidal in a dilution of 1:1,000; but such a solution, used for intrathecal lavage from the cistern to the lumbar region, is fatal to dogs. On the other hand, under similar conditions, Metaphen is bactericidal in dilutions up to 1:50,000, while intrathecal lavage with solutions of 1:25,000 are well borne.

The authors believe that Mercurochrome should not be administered intrathecally, because sublethal doses are not bactericidal; but that Metaphen deserves further investigation in this line, because it is bactericidal in sublethal doses and the margin of safety is larger.

Postoperative Value of Barbituric Acid Hypnotics

In *Am. J. Obst. & Gynec.*, Oct., 1931, Dr. Alice F. Maxwell, of the University of California Medical School, reports the results of a thorough clinical investigation (including phenolsulphonephthalein readings, blood pressure, blood plasma, CO_2 tension, blood sugar, blood nonprotein nitrogen and basal metabolic rate), made before and after operation in a group of 20 patients, equal numbers of whom had had allonal, phenobarbital, barbitol and amytal respectively.

The investigation showed that opium and its derivatives increase the frequency and severity of postoperative distention and vomiting, and are not necessary to relieve pain. Barbituric acid hypnotics are satisfactory, from a pharmacologic and clinical standpoint, when combined with an analgesic (amidopyrine). It is illogical to combine three agents in fixed proportion, because of the marked difference in their rate of elimination; it is rational to administer them separately according to clinical indications. Barbitol, by virtue of its simple chemical structure, is less toxic and clinically as effective as its more complex and toxic modifications.

The author recommends these hypnotics because their action is limited to the central

nervous system and their use is followed by a high incidence of amnesia and by little disturbance of organic function.

Failures in the Treatment of Asthma

As stated by Drs. M. B. Cohen and J. A. Rudolph, of Cleveland, in *Ohio St. M. J.*, Dec. 1931, two conditions must be fulfilled before an attack of bronchial asthma can occur, namely: (1) The patient must be in the allergic or hypersensitive state; and (2) the dose of the offending substance which reaches the bronchial cells must be large enough to induce the reaction.

The causes for failure in the treatment of asthma are: Too narrow a conception of the disease; inadequate investigation of the patient, including an improper evaluation of the history and clinical findings; lack of cooperation of the patient; lack of sufficient treatment; factors beyond our present knowledge.

It does not suffice to make skin tests with some proteins and raise the patient's tolerance to those to which he reacts. The physical examination and history-taking should be thorough, as there may be pulmonary and cardiac residual trouble which will remain after the attacks are controlled.

Patients must be made to realize that they will have to avoid food and animal contacts that are proscribed. Physicians often do not stress this sufficiently.

As regards treatment, the fact is often overlooked that when therapy is given to a patient to increase his tolerance to some allergen it is the final dose which gives the protection and that the doses leading up to that final dose are used merely to prepare the body to stand it. There is a considerable variation in the amount of pollen in the air in different parts of the United States and to treat pollen diseases correctly one must be familiar with the amounts of extracts necessary to protect against it.

Infantile Eczema

From an intensive study of 160 eczematous patients, ranging in age from 3 weeks to 4 years, Dr. F. S. Smyth, of San Francisco and his associates, in *J.A.M.A.*, Oct. 31, 1931, reach the conclusion that eczema is the response of the skin to irritation.

The source of the irritation may be single or multiple, related to local infection, to cold or heat or to intolerance of an allergic nature. The

allergen frequency is not entirely explained by contact, but probably on some immunochemical mechanism.

While skin tests are often of great value, they rarely develop before the fourth month and may be lacking entirely. In other words, the capacity to form skin tests and the clinical reactivity are independent variables but frequently related. The skin of infants is particularly susceptible to trauma and to sudden changes of temperature. Such injury may itself establish a vicious circle. With increasing age this may entirely disappear. In other instances allergy must be considered as an additional factor.

In treatment, the diet must not be so restricted as to prevent normal nutrition, since sweeping restrictions may be dangerous.

The Coffey-Humber Suprarenal Cortex Treatment of Cancer

In J.A.M.A., Nov. 14, 1931, Dr. R. H. Harris, of the W. K. Kellogg Foundation, Los Angeles, presents a clinical study of 415 patients, mostly ambulatory, with malignant tumors, who received experimental injections of the Coffey-Humber suprarenal cortex extract.

The study has led to the following conclusions:

1.—The benefits of use of the suprarenal cortex extract experienced by patients with malignant tumors, in relation to gain in weight and relief from pain, did not occur uniformly or in the majority of the patients observed.

2.—The extract administered to these patients had no selective influence on the growth, necrosis or sloughing of malignant tumors.

3.—Necrosis and sloughing of malignant tumors were not beneficial, but were detrimental to these patients, producing hemorrhage, anemia, distressing fistulas, perforation with abscess or peritonitis, and other serious consequences.

4.—Cure of malignant disease in patients with advanced carcinoma or sarcoma, in view of the experience of the patients of this series, cannot reasonably be expected to occur as a result of use of the suprarenal cortex extract.

5.—The benefits to be expected from use of the suprarenal cortex extract lie principally in improved appetite, improved muscle tone and bettered feeling of general wellbeing of patients who are ambulatory or who are not too far advanced toward a fatal termination of the disease.

Postoperative Treatment

Dr. C. V. Burt, of the New York Post-Graduate Hospital, states in *New York St. J. Med.*, Oct. 15, 1931, that, as regards the post-operative procedures in uncomplicated cases, it is no longer necessary to maintain the patient in a recumbent position or to withhold food for several days.

As soon as the patient has reacted from the anesthetic, he is placed in a sitting or semi-sitting position and allowed to move about freely. He is turned from side to side every one or two hours. He is permitted to take water in half-ounce quantities in increasing amounts. The next morning he is given weak tea.

Provided there have been no contraindicating sequelae up to the morning or noon of the first day after the operation, full fluids, gruels, cereals, milk toast or other light foods are given. On the second day everything except meat is given. On the third day a full diet is allowed, an exception being made in gastrointestinal anastomoses.

Six ounces of saline or tap water are given as a retention enema every 4 hours, or proctoclyses of 500 cc. of 10-percent dextrose in saline or tap water, for the first 24 to 48 hours.

Comfort is maintained by the hypodermic administration of morphine sulphate, 1/6 to 1/4 gr. (0.01 to 0.016 Gm.), or pantopon 1/3 gr. (0.02 Gm.) every 4 hours, as long as necessary. After the second or third night it is usually possible to obtain comfort with the ordinary somnifacients. A cathartic may also be given immediately after operation, if desired; in colon operations one or two glycerine suppositories may be used very effectively.

In Praise of Calcium

Not until comparatively recent years have students of practical dietetics devoted any serious consideration to the role of inorganic nutrients in food. Instinct, which has long been lauded as the safe guide to ideal nutrition and which is still heralded, even by physicians, has been shown to have its definite limitations in the choice of foods by man.

A generation ago, Ellen H. Richards, an American pioneer who exhibited zeal for the application of science to daily life, wrote: "It is unsafe to trust the individual to the guidance of the appetite alone, for the reason that this instinct was built up for a condition of existence, very different from that which enables the people of this country to indulge themselves today." Realizing the effect that changes in the transportation and distribution of commodities were exerting on the availability of the food supply, she sensed "conformity to scientific laws as the only way to safety."

Among the mineral nutrients, calcium has the dominant place from the standpoint of quantitative needs. It constitutes about 1.5 percent of the body—nearly 3 pounds in the case of an adult man. Of this, over 99 percent is present in the bones. The latter are, today, a recognized storehouse for calcium, this element having a far greater degree of "mobility," or freedom of liberation and transport, than is generally suspected. The best estimates currently available suggest the advisability of a daily intake of 1 Gm. or more of calcium, in order to prevent loss of this indispensable element.

Although calcium is abundantly present in nature, it is unevenly distributed in human foods; in fact, most of them are characterized by a paucity of calcium. For example, the cereal grains, tubers, meats, fish and fruits, all of which are prominent in the dietary of omnivorous man, are comparatively poor in calcium. On this account, Sherman has remarked that the "ordinary mixed diet" of Americans and Europeans, at least among dwellers in cities and towns, is probably more often deficient in calcium than in any other chemical element.

Milk is ordinarily looked on as the superlative source of calcium, and with due justice. During the World War, the U. S. Food Administration insisted, in its educational texts, that the free use of milk tends to build up a strong nation. It taught that the importance of milk can hardly be overemphasized, since there is no other food so vital to national health and efficiency.

Some writers have gone so far as to assert that calcium is not advantageously absorbed from most foods other than milk, and particularly not from artificial inorganic supplements of calcium to the diet. Recent studies by Potter and Kramer at the Kansas Agricultural Experiment Station, Manhattan, makes such generalizations untenable. Healthy women ingested alternately milk and calcium lactate, under otherwise comparable dietary conditions, in which the items mentioned supplied two-thirds of the available calcium. They appeared to utilize the inorganic calcium as effectively as the calcium of raw milk—From an editorial in *J.A.M.A.*, Dec. 27, 1930.

Safe Food Products for Parenteral Administration

It has been observed that the oral administration of dietary essentials may fail to be utilized, whereas parenteral administration may be quite successful.

In connection with this, an editorial in *J.A.M.A.*, Oct. 24, 1931, points out a possible danger; namely, that preparations derived from cellular material are likely to contain at least traces of protein and that their parenteral administration may lead to allergic phenomena. It is gratifying at the same time to know that biochemists are making progress in rendering safe products available. Substitution therapy products must be in a form not likely to harm the patient when curing a deficiency disorder.

The Rigid Personality as a Factor in Psychosis

The study of a psychiatric patient is mostly a study of his personality. The unfortunate state in which a patient finds himself is only an exaggeration of some lifelong tendency—a personality trait.

In *Arch. Neurol. & Psychiat.*, Aug. 1931, Dr. W. Muncie, of Baltimore, refers to the "rigid" personality. This is compounded, in no fixed proportions, of many factors, such as obstinacy, aggressiveness, pride, a rigid code of personal ethics, etc. In general the qualities are valuable, but they are like a two-edged sword and many of the difficulties that beset the patient in his psychosis are directly attributable to them. This is illustrated by a number of cases of depression psychoses cited by the author.

Rigid personality traits sometimes favor, but more often hinder, recovery from a psychosis. In the cases cited, the vein of inelasticity in every case jeopardized the happy outcome of the psychosis, sometimes introducing complicating features which cast grave doubts on the diagnosis of depression as the essential process.

The treatment of personality factors is a main part of the handling of such patients. Generally, the aim is to socialize the patient, introducing new points for his consideration.

Sepsis

In *J. Michigan S. M. S.*, Aug. 1931, Dr. I. A. Abt, of Chicago, remarks that, in the present state of our knowledge, there is no efficient bactericidal agent in the treatment of sepsis, whether it be a serum or a chemical disinfectant. Perhaps this does not apply to antitoxic sera.

It may be possible to increase the immune bodies of the patient temporarily by introducing into the circulation a fresh supply of healthy blood. A blood injection may be considered the most rational and appropriate form of non-specific therapy.

Recently a form of intravenous therapy, which has been designated the "blockade treatment," has been suggested. Ten minutes before an intravenous injection is given, 1 cc. of pituitrin is administered subcutaneously. Following this an injection intravenously of trypanavine, or some other dye or Pregle's Solution (an antiseptic solution of the sodium salt of hydriodic acid and iodic acid with metallic iodine—.04 percent) is administered. It is assumed that the chemotherapeutic substance is absorbed more slowly and is permitted to come into closer and more prolonged contact with the cells of the reticulo-endothelial system. In this manner the defensive mechanism of the cells is stimulated to increased activity.

The Arsphenamines in Early Syphilis

In *J.A.M.A.*, Nov. 21, 1931, Drs. A. B. Cannon and Marie B. Karclitz, of New York City, present the results of an inquiry into the relative merits of arsphenamine, neoarsphenamine and silver arsphenamine in the treatment of early syphilis. The study is based on the observation of 436 patients, in whom the disease and its treatment was of sufficient duration to fulfill the requirements.

Summing up their observations the authors conclude that, of the three drugs used, arsphenamine has proved in all respects the most satisfactory.

It requires: (1) fewer injections; (2) a smaller amount of the drug; and (3) a shorter period of time to give a negative Wassermann reaction, all these factors being greatly to the patient's physical as well as financial advantage.

The reactions, immediate and delayed, observed in the group treated with arsphenamine, are slightly fewer than in that treated with neoarsphenamine, and, most important of all, the percentage of relapses is appreciably lower. Although the authors have been using silver arsphenamine in increasing amounts for a number of years, they had so few cases suitable for this particular analysis that it is unfair to make definite conclusions about its value from their figures. At the present time they are focusing their study on this drug and hope that their results with a larger series of cases will be more enlightening. The statistics on the few cases in this paper would suggest that sil-

ver arsphenamine may be more desirable as an antisyphilitic remedy than neoarsphenamine.

Because in some persons an intolerance to one arsphenamine develops, it is necessary to have another for a substitute. Silver arsphenamine has the advantage, with neoarsphenamine, of being already neutralized; it has a lower toxicity than either of the other products, and can often be given to a patient who reacts severely to neoarsphenamine or to arsphenamine. It has been demonstrated in the Vanderbilt Clinic that silver arsphenamine produces no vascular disturbance and little systemic injury.

Though the average practitioner may be convinced of the superiority of arsphenamine to any other product, he is often tempted to choose some preparation that can be given more simply. There is no doubt that arsphenamine is more trouble to administer, since it has to be neutralized and well diluted and given preferably by the gravity method; but, the welfare and cure of the patient being the first consideration, any inconvenience to the physician is negligible.

When is a Man Drunk?

The law recognizes the terms intoxication and drunkenness.

In *Amer. Med.*, June 1931, Dr. C. Scheffel, of Miami, points out that it is rational to assert that whenever the human economy ceases to convert an ingested substance to the end-products into which they are commonly split, intoxication is produced. In the case of alcohol, when that substance appears unconverted in the urine, then a state of intoxication exists.

Regarding drunkenness, however, we must rely largely on psychologic factors for diagnosis.

Whenever a physician is called to determine the existence of intoxication or drunkenness, a two-stage mental examination should be utilized, because it approximates more closely than any other means the scientific method.

If primary examination discloses physical or mental deviations from apparent normality, it is obvious that, if such deviations are caused as the result of ingested intoxicants, they should disappear at a secondary examination, made after a sufficient length of time, 24 hours being a fair average time for this purpose. If mental behavior at the primary examination proves markedly abnormal, while on the secondary examination it is found within the limits of normality, then drunkenness existed.

Parathyroidism

From the consideration of some cases of hyperparathyroidism which they cite, in *Am. J. Surg.*, June, 1931, Drs. Max Ballin and P. F. Morse, of Detroit, conclude that parathyroidism seems to be a very frequent affection and will be encountered often if the symptoms are looked for and interpreted properly; at least a lesser degree of the condition seems to be very frequent.

General demineralization of the bones, due to deficiency of calcium, in addition to localized cystic areas, usually with severe pain in the bones, especially in back and legs, is the rule. The

combination of these bone changes with high blood calcium and lowered blood phosphorus, should be sufficient reason to investigate the parathyroid area for tumor or hyperplasia of the parathyroids.

The parathyroid tumor or hyperplastic gland should be removed in such patients. This operation seems to be fairly safe, under proper after-care with the administration of parathyroid hormone (Collip's extract), and later, calcium preparations.

Should Physicians Itemize Their Bills?

In *Med. Economics*, Nov., 1931, Hall Johnston suggests that physicians should itemize their patients' bills, at least in a general way, so as to show how the total is made up. The statement on the bill "For professional services" is not always sufficient for the person who has to pay it.

Often particular services are forgotten and a general charge looks excessive. Physicians' professional reputations are thus injured, when a few general items would fully clarify matters. This is especially the case when services to more than one member of a family are included in the bill. The person who pays the bill is frequently not the one for whom service is rendered and he should be given some adequate idea of what it is all about. There is no reason why anything should be treated as a secret. Modern business methods demands an itemized bill.

The Bendien Spectrophotometric Diagnostic Test for Cancer*

Dr. Bendien, of Utrecht, Holland, has claimed to have found a method of diagnosing cancer from the blood at a stage so early as not to be detected by any other available method. Certain investigators of the British Cancer Institute have supported these claims.

In *Lancet* (Lond.) Aug. 29, 1931, Dr. F. C. Smith and his associates give an outline of the underlying principles of the method, as well as their own findings from following it.

The test consists of two parts: In the first, a series of test tubes are prepared, containing mixtures of sodium vanadate and acetic acid, in varying amounts. These tubes are numbered 1 to 20. When the blood serum of a healthy person is added to these tubes, flocculation should not occur normally below the tube numbered 6, increasing and again decreasing until it ceases in tube 19. In existing carcinoma (and some other diseases) flocculation begins in the tubes below No. 6.

The second part of the test is more specific. A precipitate formed in a tube below No. 6 is dissolved in sodium bicarbonate and the ultraviolet absorption spectrum of this solution is photographed. The procedure of this spectrophotometric process is highly technical, beyond the scope of ordinary technical labora-

*[Note. Those interested in Dr. Bendien's test can obtain an English translation of his work from Wm. Heinemann (Medical Books, Ltd.), 99 Great Russell St., London, W.C. 1. The price is about 10 shillings and sixpence equivalent to about \$2.50.]

tories, and involves the use of expensive apparatus, but the absorption curve of the solution is claimed by Dr. Bendien to be specific in cases of carcinoma. At any rate, Dr. Bendien, by his method, correctly diagnosed four or five cases of cancer from 38 samples of blood of patients whom he did not know, sent to him from England.

Dr. Bendien did not, in his publication on this subject, make all details of his method clear enough so that other investigators could follow them and get results the same as his.

Dr. Smith and associates, following the procedure as published, obtained the same type of absorption curve in tuberculosis, cancer and other diseases. From their investigations they feel confident that the spectrophotometric method applied to Dr. Bendien's solutions has no value in the diagnosis of cancer.

Deficiency of Vitamins in Infancy

A study of the association of vitamins with caries of the teeth has shown that, in man, deficiency of vitamin A has no specific injurious effect on the formation and calcification of the teeth. A disposition to dental caries, therefore, cannot be due to deficiency of vitamin A in infancy.

Probably the same applies to a deficiency in vitamin B and C; in this respect one cannot apply the conclusions from experiments on guinea-pigs to man. Guinea-pigs are hypersensitive to deficiency in vitamin C, and their incisors grow continuously; in man dental anomalies are due chiefly to abnormalities of the mineral metabolism during the period when the teeth are calcifying.

The study also shows: The death rate among children is considerable after their recovery from xerophthalmia; hardly two thirds of these children reach the age of 8 years. After this, their development goes on normally. Deficiency in vitamin A leaves no characteristic marks or defects, except in cases of advanced keratomalacia, which nearly always implies impairment of vision or blindness.—Dr. C. E. BLOCH, of Copenhagen, in *Am. J. Dis. Child.*, Aug. 1931.

Modified Psychiatric Approach in Gastrointestinal Disorders

Many patients with gastro-intestinal disorders are psychoneurotics. In *Ann. Intern. Med.*, Sept. 1931, Drs. T. H. Morrison and S. Morrison, of Baltimore, express the opinion that such individuals would be managed better by a "gastro-psychiatrist" than by a psychiatrist or gastro-enterologist.

The use of drugs in psychoneurotics is neither generally understood nor accepted; there need be no taboo on drugs, which are often very helpful and of more psychotherapeutic value than other more frequently employed measures. The "gastro-psychiatrist" will use drugs and treat symptoms while trying to get at the fundamental basis of the neurosis. He does not stress the "nervous" element in the patient's personality, because he knows from experience that little or no benefit is derived from such a procedure. But very gradually the patient is brought to recognize

that "nervousness" is the etiologic agent in his case.

Most psychopathic persons with gastrointestinal complaints fear the stigma of having professional contact with a psychiatrist. But the gastro-psychiatrist can evaluate the symptom-complexes and plan a rational form of treatment suited to the individual. Good results cannot be expected when there is antagonism between patient and physician, such as is likely to exist when gastro-psychoneurotics are treated by a psychiatrist.

Fixed Medical Fees

Should fees for medical and surgical services be arranged according to the patient's financial status or should they be fixed?

Hall Johnston, in *Med. Economics*, Aug. 1931, says that the poor get good medical services free and the rich get good medical services without having to worry about the cost. It is the man of moderate means who suffers by the fixed fee system.

The fixing of fees and free services are doubtless contributing causes to the economic unrest disturbing the minds of those who patronize the doctor. Ought that part of the community that is well and working to pay for the sick who cannot pay at all?

The Vitamin A of Butter

Next to milk, which is often described as "the most nearly perfect food," probably no single dietary component has received more laudatory mention from dietetic experts than has butter. This has not been due primarily to the high energy value of the milk fat, for many fats and oils of equal food fuel value and ready digestibility are available everywhere at far lower prices than butter of good quality commands. The palatability and characteristic flavor commend it to many persons; but the student of nutrition is likely to refer first of all to the comparative richness of good butter in vitamin A. One no longer hears of complaints regarding the insanitary conditions under which the "butter substitutes" were alleged to be manufactured, or the indigestibility of the substitute fats, or their hygienic qualities. Butter is today lauded primarily because of the indispensable vitamin that it contains; and the producers of margarine have not been slow to venture to incorporate vitamin A into their "artificial" products as effectively as possible. Legislation in the United States has generally been such as to discourage the oleomargarine industry, and our present knowledge of the wide difference in vitamin value between butter and oleomargarine, naturally and properly tends to increase the preference of consumers for butter. It appears safe to say that none of the butter substitutes approach good butter in vitamin value and that butter, even when of poor quality, is likely to be much richer in vitamin than any other commercial form of food fat.

The latest developments in the scientific study of vitamin B have an unexpected bearing on the possible food value of butter fat. From recent researches it seems to be clearly estab-

lished that the physiologic action of vitamin A can be reproduced, or at least closely simulated, by administration of the plant pigment carotene (or carotin, as it is usually designated by American chemists). This helps to explain the nutrient virtues conspicuous in foods that are rich in carotinoid pigment. It has been demonstrated that the non-saponifiable matter from butter contains both carotene and vitamin A. The natural color of butter thus endows it with unexpected virtues not formerly expected.—From an Editorial in *J.A.M.A.*, Dec. 27, 1930:

Chemical Removal of Inoperable Breast Cancers

Over one hundred years ago, Canquoin, of Paris, devised a technic in which zinc chloride was employed as an escharotic for the removal of malignant tissues.

In *Med. Herald, Physic. Therap. and Endocrine Survey*, Aug., 1931, Dr. C. W. Strobell, of San Diego, Calif., states that this method, with revised modern improvements in technic, has been found successful in cases of inoperable cancer of the breast in women.

Following anesthesia (hyoscine and morphine) the breast skin, fascia and nipple structures are removed with sodium hydroxide, the denudation extending to and including the axilla and the axillary nodes being enucleated with the same agent. Zinc chloride is then applied to the breast according to the indications, the dressings confining the zinc strictly to the surfaces on which it is placed.

The zinc chloride devitalizes the tissues and changes them to a leathery consistency, which is pared away to give place to a fresh application of zinc chloride. This is done from day to day. In the course of a week or so the devitalized layer will be thrown off at the line of demarcation. Skin grafting is done following healthy granulation.

This treatment can be carried out at the patient's home.

In 1921, the author reported upon 40 cases so treated. All these were ulcerous, necrotic, hemorrhagic and metastatic, beyond the possibility of surgical intervention. The average survival of 20 of these patients following the zinc chloride treatment was over 2 years, and many were still living at the time of the report. In 6 cases there was recurrence. The other 20 patients died within the first year following treatment. The author's statistics at present extend to 80 cases.

Eczema

According to Dr. S. W. Becker, of Chicago, in *J.A.M.A.*, Oct. 3, 1931, most cases of eczema are due to external irritation to a sensitive skin, and the chief measures for its relief, following search for and removal of the cause of irritation, are local.

In the vesicular stage, the wet dressing is the method of choice. Potassium permanganate, in the strength of 1 grain (0.065 Gm.) to a pint (475 cc.) of water, prepared fresh twice daily, is the best wet dressing for all purposes. The dressing should not be surrounded by an impervious substance such as oiled silk or paper,

as free evaporation is desired; the dressing should be kept wet but not dripping.

After the more acute signs and symptoms have subsided, a sulphonated bitumen zinc paste may be applied (sulphonated bitumen N.F., 1.8 Gm.; zinc oxide 15 Gm.; sufficient petrolatum to make 60 Gm.) This is applied about as thick as butter on thinly buttered bread. It is renewed morning and night after gentle removal with olive oil. Water and soap should be avoided. The paste should be continued in use even after the skin appears normal, since there may be a recurrence if treatment is discontinued too early.

As well as eczema in adults, eczema in infants may be treated in this way, and White's crude coal tar ointment is a useful adjunct, alternating it with the bitumen-zinc.

Should the Internist Know Syphilis?

Answering the question, should the internist know syphilis?, Dr. Thompson, of Hot Springs, Ark. in *J.A.M.A.*, Oct. 3, 1931, remarks that it would seem that, while the great burden of the control of this ubiquitous disease must rest on the general practitioner who sees it first and who must learn to use the dark field until a satisfactory differential stain has been devised, it is the internist who must take up the load when the disease has become generalized.

Dr. Thompson does not deny the rights of specialists, but insists that syphilis is not a genito-urinary disease nor is it a disease of the skin; it is a constitutional disease, a disease of the internal organs, and the internist is the one best qualified to deal with it.

Tryparsamide in the Treatment of Neurosyphilis

In the experience of Drs. H. C. Solomon and H. S. Epstein, of Boston, as expressed in *New York St. J. M.*, Aug. 17, 1931, cases of early neurosyphilis, of the meningeal variety, respond extremely well, practically without exception, to tryparsamide. This statement also holds for the ordinary type of early meningo-vascular neurosyphilis. Almost always clinical improvement will be noted in the course of three or four weeks. Serologic cure is to be expected in these cases in the course of a few months and, in the authors' experience, a serologic cure is inevitable.

In late cases of syphilis, tryparsamide may have no effect on systemic symptoms, whereas arsphenamine is most effective. In late neurosyphilis, cases of so-called cerebrospinal syphilis or meningo-vascular neurosyphilis, predominantly of the meningeal type, tryparsamide is effective much as in the early cases, but there are exceptions to the rule where there are pathologic changes which are fixed and irreparable.

Regarding the question of the comparative value of tryparsamide and fever therapy, the authors express the opinion that the results are fairly similar; that is, one may expect a thoroughly good clinical response in approximately 30 to 35 percent of the cases of general paresis treated by either method. Their routine is to

give malaria, when possible, in cases of general paresis, following this invariably by tryparsamide until the serologic findings have become normal and remain so for a period of several years.

Asthma Research

Dr. Jas. Adam, in *Glasgow M. J.*, Aug., 1931, reports some interesting laboratory findings in an asthma research extending over 18 months.

Eosinophilia is characteristic of asthma. Anything that increases or decreases eosinophilia increases or decreases asthma.

A cold-water douche, by stimulating the adrenals, prolongs adrenal flow and reduces eosinophilia.

In asthma the tendency is clearly acidotic. Adam has never found the slightest evidence for alkalosis in an adult with asthma.

In asthma there is a tendency to amino-acidosis; the blood chlorides are lowered; gastric hypochlorhydria has been the rule; there is an increased output of ammonia in the urine during and just after the asthmatic attack.

There is a toxicosis in asthma; this and the condition of the adrenals are more important than allergy.

Value of the Aschheim-Zondek Test to the General Practitioner

Of the many tests that have been instituted for the diagnosis of pregnancy, the Aschheim-Zondek test is, apparently, the most accurate and valuable in its application.

In *New York St. J. M.*, July 15, 1931, Dr. W. Filler, of New York, states that his use of the test in 50 cases has confirmed its accuracy, as reported by previous investigators. The accuracy in the author's series was 95 percent.

The author demonstrated the use of the Aschheim-Zondek test as a diagnostic aid to the physician:

- 1.—In making a positive diagnosis of pregnancy earlier than through any other means.
- 2.—In differentiating menopause from pregnancy.
- 3.—In differentiating ectopic pregnancy from adnexal disease.
- 4.—In differentiating fibroid of the uterus from pregnancy.
- 5.—In the diagnosis and prognosis of hydatid mole and chorioepithelioma.
- 6.—In the possible discovery of a cause of hitherto unexplainable sterility.

Woodlawn Hospital, Chicago: Doctor-Planned and Doctor-Run

The Woodlawn Hospital, Chicago, is a fine example, of a completely successful community hospital, community designed, superintended and controlled by community physicians. Every department in the hospital has the most modern serviceable equipment; economy is effected without sacrifice of efficiency; physicians in good standing, who are not regular members of the staff, can bring their patients here; special clinics

and diagnostic services are provided as a part of the community service; there are no teaching affiliations, no official interns, no resident student nurses; the patients hold the center of the stage.

Here, then, is a hospital owned, planned, directed and operated by doctors, their patients and neighbors, which gives a high grade service at reasonable rates and is more than self-sustaining.—DR. GEO. B. LAKE, of Chicago, in *Hosp. Topics & Buyer*, July, 1931.

Stricture of the Urethra

In *J. Urol.*, Sept. 1931, Dr. J. R. Caulk, of St. Louis, summarizes the salient features of stricture of the urethra as follows:

- 1.—Gonorrhea is the most frequent cause of stricture formation in the urethra.
- 2.—Injudicious treatment with strong irritating medicaments predisposes to their development.
- 3.—Appropriate treatment during the acute stage and supervision during the chronic, with particular attention to the adnexa, minimizes the incidence of its occurrence.
- 4.—Latency and chronicity of infection must be combated by treatment of the vesicles and prostate.
- 5.—Muscle spasm is apt to prove deceptive in assessing the nature of a stricture.
- 6.—Whenever possible, strictures should be dilated gradually and repeatedly. Divulsion is to be condemned.
- 7.—Operative procedures should usually be reserved for its complications.
- 8.—Because of the pronounced tendency toward urethral regeneration, plastic procedures, except in rare instances, are seldom necessary.
- 9.—The recurrence of stricture is likely. The time is difficult to predict, hence, periodic supervision is essential.
- 10.—The mortality of stricture is low, occurs usually in neglected cases and results from sepsis or renal disease.

Fracture of the Patella

As the result of an experience of 36 years in the treatment of fractures of the patella, Dr. E. D. Martin, of New Orleans, in *Internat. J. Med & Surg.*, Aug. 1931, describes what he considers the best method of obtaining rapid bony union with the fewest complications.

Open reduction is absolutely necessary. The approach is best made by a transverse incision over or near the line of fracture. Clots are removed, intervening soft tissue trimmed off and the ligaments and capsule sutured with chromic gut, following replacement of the fragments in the normal position.

A fixation splint must be used. This is done by transfixing the quadriceps tendon and patellar ligament with a No. 16 annealed iron wire, introducing it as close to the patella as possible, bringing the ends together and tightening; a mattress suture is formed and the two sides of the wire laid across the top of the patella about three-fourths of an inch apart; all of the slack is taken out of the wire by twisting, the top edges of the patella are brought into the

closest contact and the strain on the sutured ligament is taken up entirely by the wire, bridging over the injured parts, which undergo a softening process while healing.

There is no need to immobilize the limb, but the patient should be kept in bed until the wound is healed. Bony union is obtained rapidly in 95 percent of the cases.

Heart Rate and Size

In *Med. Insurance*, Sept., 1931, Dr. W. Dock, of San Francisco, Calif., asserts that the rate of the pulse and the size of the heart are the surest guides to the work and the efficiency of that organ. The blood pressure and the rate and volume of flow are but inconstant indices of the energy liberated by the heart each day.

Energy requirement is doubled by a 50-percent increase in the diastolic volume (in man, this would mean a 30-percent increase in area of the cardiac silhouette) or by a 115-percent increase in rate, or a 250-percent increase in cardiac work.

To state these relations in another way:

A 50-percent increase in the area of the cardiac silhouette represents an increase of not less than 150 percent energy liberated at each heart beat.

A 50-percent increase in rate represents an increase of not less than 40 percent in energy liberated by the heart per minute.

A 50 percent increase in mean blood pressure or cardiac output per beat represents an increase of 0 to 40 percent, with an average of perhaps 25 percent, in energy liberated by the heart at each beat.

Thus the volume of the heart is important, not merely because it bears a constant relation to cardiac effort, but because a given increase in volume change is 5 to 10 times more significant in indicating change in cardiac strain than is a change of similar proportion in the volume flow of blood. In heart failure the volume flow may diminish when heart size and heart strain are increasing.

Colonic Changes in Chronic Arthritis

As stated in *Ann. Intern. Med.*, Oct., 1931, by Dr. W. H. Dickson, of Toronto, certain experimental clinical observations on patients with arthritis have suggested that some of the abdominal disturbances of chronic arthritis might be associated with nutritional deficiency, especially deficiency of vitamin B. There seems to be no doubt that tone and motility of the large bowel are dependent on the nature of the diet, and in cases of atony definite improvement may be expected from dietetic measures. The atonic condition is a definite expression of malnutrition.

The dietary treatment of such patients should include: first, liberal administration of vitamins, especially vitamin B; second, a change in the balance of the diet. Fresh vegetables and fruits, cream, butter, eggs, liver and brewer's yeast (or wheat germ, which is better) should be given.

Adrenalin in Tetany

A correspondent of the *British Medical Journal*, Dr. J. A. Emslie, tells, in the July 25, 1931, issue, of a boy, aged 13, who had been subject to asthma but entirely free from it for the previous year, developing tetany as a result, apparently, of over-exertion (football, cricket and sprinting). He was promptly relieved by an injection of 0.25 cc. of adrenalin (epinephrin) solution, 1:1000. The case is described thus:

"Carpopedal spasm was pronounced, the muscles of the trunk were also affected, and Chvostek's sign was present. The arm reflexes, abdominal reflexes, and knee-jerk were all exaggerated. The pain was very severe, particularly over the upper part of the chest and over the cardiac region. In appearance he was very gray, and appeared to be breathing rapidly and deeply. The respirations were 50 per minute, and the pulse rate was 140. The heart sounds were perfectly normal and the apex beat was within the nipple line. There was no laryngeal spasm and no signs of asthma. Expiration and inspiration were unimpeded."

The epinephrin was administered because of the asthmatic history. The effect is thus described:

"About twenty seconds after the injection he said he began to feel better, and the pain was getting less. In sixty seconds he was very much better, the pain was gone, and he felt relieved in every way. The deep breathing still continued and the spasm remained; now and again he would have a great shudder, and sometimes smaller shivering attacks, but by another half-hour the condition passed away and he felt himself again."

Subphrenic Abscess

When a subphrenic abscess is situated above the liver and protected by the overhanging ribs, the operative approach is difficult.

In *J.A.M.A.*, Oct. 31, 1931 Dr., D. C. Elkin, of Atlanta, expresses the opinion that drainage by the most direct route without spreading the infection can best be accomplished by a transpleural operation, performed in two stages.

Under procaine or nitrous oxide and oxygen anesthesia, about 2 inches of the eighth and ninth ribs are excised in the posterior axillary line. The intercostal muscles, with the nerves and vessels, are removed, so as to give a clear view of the underlying pleura. The parietal pleura is sewn to the diaphragm by eight or ten interrupted sutures of catgut placed in a circle. The sutures are left long and are tied over the gauze packing in order to cause firmer adhesions and safer obliteration of the costophrenic angle. Forty-eight hours later the gauze is removed and the sutures are used for traction. An exploring needle can then be passed with safety through the diaphragm into the subphrenic space. If pus is encountered, the needle is followed into the abscess and the cavity drained. If pus is not found, there is no danger in opening the diaphragm and exploring the top and posterior surfaces of the liver with the fingers.

NEW · BOOKS

In ignorance, a man fears everything; in wisdom, he loves everything.

—MANLY P. HALL.

Hertzler: Surgical Pathology of the Skin

SURGICAL PATHOLOGY OF THE SKIN, FASCIA, MUSCLES, TENDONS, BLOOD AND LYMPH VESSELS. By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Haled, Kansas; Professor of Surgery, University of Kansas. Illustrated. Philadelphia: J. B. Lippincott Co. 1931. Price \$5.00.

In this volume, the author emphasizes the importance of recognizing and properly treating small lesions of the coverings of the body and stresses that it requires no apology to treat these as serious menaces to the patient. It is not the "marring of the hypothecated beauty of the patient," admonishes Hertzler, but "the ultimate danger to the life of the patient that should appeal to the surgeon."

The volume is divided into three parts. In the first part of the work, diseases of the skin are discussed; the second part takes up the diseases of fasciae, muscles and tendons; while the last part embraces diseases of the blood and lymph vessels.

The key-note to the discussion of malignancy of epithelial skin tumors is that the line between the benign and malignant is so difficult to determine that, in each group, precancerous lesions should be considered as already malignant.

In discussing melanomas, the author states, "Clinical observations lead me to suspect that Virchow was right, in a measure, in dividing melanomas into two groups, those derived from epithelial cells and those derived from connective tissue. To say 'derived from' prejudices too much. It were better to say that the one tended toward development into epithelial, the other into connective tissue. The truth is, melanomas are never epithelial and never connective tissue in origin. They are the derivatives of embryonal rests and remain outlaws throughout life."

On page 258, in talking of thromboangiitis obliterans (Buerger's disease), the author points out that writers generally emphasize the common occurrence of this affection in the Jewish race, but all his cases were in Gentiles.

While the work contains considerable important material, the terminology used in some places is antiquated. For instance, on page 268, he speaks of "acute pus microbe lymphangitis."

As in the previous volume, each chapter is followed by an abstract of the most important contributions to the literature pertaining to the subject matter.

The illustrations (mainly photographs and

microphotographs) are well executed. The index is thorough. All in all, the work represents a good companion to the author's previous volumes. M. T.

Robinson: Story of Medicine

THE STORY OF MEDICINE. By Victor Robinson, M.D., Professor of History of Medicine, Temple University School of Medicine, Philadelphia. New York: Albert & Charles Boni. 1931. Price \$5.00.

The plain story of medicine has been garnished by many men in many years, but Dr. Robinson offers this dish served with a piquancy, relish and delicacy which stimulate the appetite and satisfy the literary epicure.

Here we have no cut and dried relation of successive events; no precision of dates of important discoveries; no sharp distinctions between pathologic conceptions; rather we have a panoramic view of the gradual development of the science and art of medicine, the main incidents, set in their historical background, serving as high-lights in a philosophic interpretation. For Dr. Robinson is a philosopher, a showman who stands at the side of these pictures and, with his wand, points to and explains the significance of each new development and its connection with the story as a whole.

We pass from the misty stone age to the wizard of Cos, to the Greek physicians of Alexandria, to Galen in Rome, to the castrated Greco-Arabian School, to Constantine the African and the slow return of Grecian medicine to Europe through the Saracen translators. We chat with Paracelsus, watch Vesalius with his scalpel, see Gilbert, the Englishman, initiating his magnetic theories and Harvey demonstrating his immortal discovery. From these it is but a step to Jenner, Pasteur, Beaumont, Mendel and Koch. We have sat on the magic carpet; time has been abolished; and, while running through Dr. Robinson's erudite and charmingly told story, we have passed through many centuries of time and flitted through many lands.

To say that Dr. Robinson has presented the Story of Medicine in a compelling manner would be entirely inadequate; he has told it in an entirely original way; his running commentaries make the story a real living one, with continuity and purpose; no longer is it a skeleton of dry bones, but a body with pulsating flesh. He is to be congratulated on the production of a volume, a classic of style, which should grace the shelves of every medico-literary connoisseur.

Geschickter & Copeland: Tumors of Bone

TUMORS OF BONE. By Charles F. Geschickter, M.D., Surgical Pathological Laboratory, Department of Surgery, Johns Hopkins Hospital and University, Baltimore, and Murray M. Copeland, M.D., Memorial Hospital, New York City. With Forewords by Dean Lewis, M.D., Professor of Surgery, Johns Hopkins Hospital and University and Joseph Colt Bloodgood, M.D., Clinical Professor of Surgery, Johns Hopkins Hospital and University, Baltimore. New York City: The American Journal of Cancer, 654 Madison Ave. 1931. Price \$5.00.

For many years special attention has been given to the study of bone tumors, especially malignant disease, in the Johns Hopkins Hospital, under the direction of Dr. J. C. Bloodgood.

The present work covers completely the field of bone tumors and is based on a study of over 3,600 cases. It gives in detail the clinical picture, the roentgenologic features, the prognosis, treatment and pathologic aspects of the osseous neoplastic entities.

There are 22 chapters, with a foreword by Dr. Dean Lewis on the interpretation of clinical findings and one by Dr. J. C. Bloodgood covering the rules of procedure in dealing with tumors of the bones. A chapter is devoted to each type of bone tumor and each chapter is complete in itself, with a summary, a tabulation of cases and a bibliography.

Sarcoma of the bones naturally receives major attention on account of its great prevalence, and 6 entire chapters are devoted to the different types, as well as discussions in other chapters in connection with other conditions. Particular stress is given to the early recognition of sarcoma by means of the roentgenogram and histologic study.

The importance of early surgical treatment and the excellent results of amputation and resection are impressed upon the reader.

The book has been thoroughly indexed for the purpose of ready reference, particularly from the standpoint of differential diagnosis.

The very thorough treatment of the subject of bone tumors from every standpoint as given in this work should appeal especially to orthopedic surgeons, radiologists and pathologists, as well as to the general surgeon and general practitioner. The price is very reasonable.

Lindworsky: Experimental Psychology

EXPERIMENTAL PSYCHOLOGY. By Johannes Lindworsky, S.J., Professor of Psychology in the German University of Prague. Translated from the German 1930 By Harry R. DeSilva, D. Phil., Associate Professor Psychology in the University of Kansas. New York: The Macmillan Company. 1931. Price \$3.75.

The Gestalt psychology of Köhler and Koffka has gained some vogue in this country, but Lindworsky is not an adherent of this system, though his perception of the importance of psychic relationships flavors this entire work.

Experimental psychology is concerned with mental events—how we see color and hear tones; how fantasy operates; how we acquire and lose the contents of our memory—not with the whys of these matters, which are in the domain of philosophy. The primary scientific method of experimental psychology is retrospective self-observation.

On these premises, the author has built his thesis, in which he treats of simple and related sensations; absolute images; cognitive achievements; elementary and higher feelings; the volitional life; exceptional mental states—sleep, dreams and hypnosis; etc.

The book is written in the somewhat heavy and involved German manner (the translation appears to be adequate), and close attention is required to follow the argument. Here the psychologist and psychiatrist will find much of great interest and value, and so will the general practitioner who has the time and inclination to master the intricacies of the discussion and apply the knowledge gained to the study of his individual patients, many of whom are suffering from psychic aberrations whose nature would be clarified by an understanding of the matters dealt with in this volume.

White House Conference on Child Health: Body Mechanics

BODY MECHANICS: EDUCATION AND PRACTICE. Report of the Subcommittee on Orthopedics and Body Mechanics, Robert B. Osgood, M.D., Chairman. White House Conference on Child Health and Protection. New York and London: The Century Company. 1932. Price \$1.50.

It is merely trite to say that the future physical fitness of a nation depends upon its children.

In the White House Conference on Child Health and Protection, called by President Hoover, the Committee on Medical Care for Children felt that the relation of body mechanics (posture) to child health should be investigated, and this report of a subcommittee, of which Dr. R. B. Osgood, of Boston, was chairman, is the result of a searching inquiry.

Body mechanics is defined as "the mechanical correlation of the various systems of the body with special reference to the skeletal, muscular and visceral systems." The subcommittee found positive evidence, as given in this report, that not less than two-thirds of the young children of the United States exhibit faulty body mechanics. The evidence further shows that, where systematic attempts have been made in the schools to improve faulty body mechanics, it was always associated with improvement in health and efficiency. It will be observed that the word systematic is used, as there is an important distinction between training in the principles of body mechanics and ordinary training in physical exercises.

Apart from the broad social question, physicians and physical therapists who have had experience with posture training, have been generally convinced that such training is beneficial to health, nutrition and morale and that the favorable influence of the training per-

sists as long as the correct posture is maintained. Moreover, many conditions such as visceroptosis seem very directly dependent on faulty posture in childhood and adolescence.

The large amount of valuable information gathered here from original and extensive investigations should be of great interest to family physicians, school physicians, orthopedists, pediatricians and in fact to all who are sincerely concerned with the physical status and health of the future American citizen. It would, indeed, be a pity if practical steps did not result which should be of great benefit to all the people.

Cooper, Denston & Riley: Pharmacognosy

A TEXT OF PHARMACOGNOSY (Part I—Practical). By J. W. Cooper, Ph.C., Pharmacist, Leeds Public Dispensary, Special Lecturer in Pharmacy, Bradford Technical College, Author of "Pharmacy: General and Official," etc., and T. C. Denston, Ph.C., Lecturer in Pharmacognosy, Bradford Technical College. With Illustrations and Drawing Notes by M. Riley, A.M.C., Art Master, Bradford College of Art and Crafts. New York and London: Isaac Pitman & Sons. 1931. Price \$3.00.

The authors are of opinion that the teaching of pharmacognosy should be in two parts, the first dealing with the general description of the physical qualities of the basal substances used as drugs and the second part their preparation for their special therapeutic use.

The present volume covers the first part; it gives the macroscopic characters of seeds, roots, leaves, etc., for all the common drugs, with original drawings illustrating them.

The book should be found useful to teachers and students of pharmacy, but is intended specially for those preparing for the (British) Chemist and Druggist Qualifying Examination.

Sanger: Fight for Birth Control

MY FIGHT FOR BIRTH CONTROL. By Margaret Sanger. New York: Farrar & Rinehart, Inc. 1931. Price \$3.00

The stories of the pioneers of all great movements are thrilling to all who have red blood in their veins, and when the pioneer is a delicate woman, fighting against entrenched bigotry and ignorance for a forward step in human progress, the tale holds one even more closely. Such is the story of Margaret Sanger's fight for the right to help broken and despairing women to a realization of some of life's blessings.

This account, written by herself, of a woman who gave up most of the things which most women consider all-important, in order to save her suffering sisters from what, in many cases, is worse than death, is written with a clear simplicity and directness which takes hold of one from the first page and maintains that hold until the last page is turned. None of the tricks of the literary stylist are here, but the blazing sincerity of the crusader. The picture of the early life at home, of love, marriage and the coming of a family, make one sense the author as a personal friend.

Then comes the dawning of the consciousness of being a free and unique soul, with a work to do in the world, and the setting forth upon that mission, with its heavy freight of misunderstanding, persecution by ignorant fanatics, indictments, exile, study, trial and imprisonment. But through it all, the vision of the goal was never lost and the frail body was driven on by the unshakeable soul, through experiences from which most strong men would shrink, until the vision became, to a large extent, a reality. Not wholly, however, until the obsolete and ridiculous laws and rulings which make the giving of information on birth control a crime are erased from our statute books.

Those who are interested in the progress of great movements will find here the record of the inception of one such, written by the woman who started it—a valuable historical document. Those who love a good story, powerfully and simply told, will sit up half the night reading this one. No physician can afford to be uninformed about a matter in which he will presently, by force of public opinion, be taking an active part.

Hall: Occult Philosophy

THE PHOENIX, an Illustrated Review of Occultism and Philosophy. By Manly P. Hall. Los Angeles, Calif.: Hall Publishing Co. 1932. Price \$5.00.

The growing interest in occult phenomena and philosophy make this a favorable time for the appearance of a book like this, which combines bits of heavy oriental symbolism, like the Chapter on the Wheel of Pythagoras, with exciting stories, such as those about the Sorcery of Asia, and thrilling biographies like that of the Comte de St. Germain.

In spite of the immense learning which is visible on every page, the language used is clear and direct and the material is of absorbing interest to anyone who is at all interested in the general subject of occultism.

There are six biographic sketches—Bodidharma, Albert Pike, the Comte de St. Germain, Gandhi, Madame Blavatsky and Appollonius of Tyana; six philosophical chapters, including the highly practical one on Concentration and Retrospection; and six descriptive and historical chapters, of which the one on the great pyramid is one of the most fascinating.

The illustrations are among the most striking features of the book, being entirely out of the ordinary: ancient and modern symbolic drawings; rare portraits, including those of two of the "Great Masters of the Far East," which have never, heretofore, been available to the general public and which will be considered, by many, as being worth the price of the book; and others of various types, all of the deepest interest.

As a whole, the volume is a beautiful piece of bookmaking, heavy, suede-finish, india-tint paper and large, artistic type being used, so that the splendid pictures appear at their best. The size of the book will seem a bit awkward to some, as it measures eleven by sixteen inches.

This will be a real treat to students of oriental philosophy and occultism and to all who are at all interested in these subjects.

Lake: A 5000-Year Plan

A 5,000-YEAR PLAN. By George B. Lake, M.D., Editor of CLINICAL MEDICINE AND SURGERY. Chicago: The Society for Service, 4423 North Paulina Street, 1932. Price \$0.50.

In this pamphlet of some twelve or fifteen thousand words the writer endeavors to present to the uninitiated the way of thought commonly known as the Ancient Wisdom, and popularly presented as Theosophy, Rosicrucianism and under other names: the metaphysical background together with its ethical implications. An enterprise so comprehensive is not ordinarily attempted except within the limits of a large volume. Its accomplishment within the thirty small pages makes it a notable achievement. The style is direct. Its simplicity is a result of a meticulous selection of words. There is a fine brevity, without cramping compression. The article is an organic whole. It has the coherence of a perfectly articulated structure and makes good reading.

The interested but uninformed reader will find here a succinct statement of the tenets of Theosophy—a first reader in the literature of the subject. The brief but well-selected bibliography appended will serve as a reliable guide in the further study of the "Ancient Wisdom."

The critical reader (and it is well to point out that such a one is not necessarily a skeptical or prejudiced one) will find some things in the essay the validity of which may be questioned. To such a reader, accustomed to the discipline of philosophic thought, the simple assertion that man is here for a purpose and that that purpose is to attain to the spiritual stature of a demi-god may possess indisputable validity if proposed as an article of a religious faith, but when proposed as a philosophic concept from which much that follows is developed it calls for the most painstaking philosophic scrutiny. Within the limits of this brief essay, a comprehensive examination of this proposition is certainly impossible; but neither is it possible to grant it the validity which the writer assumes without granting the validity of whole structure which is built up later. To do so would be naively uncritical.

The author writes with a lucidity of expression and thought that makes it difficult to explain some of the errors in reasoning that crop up in the argument as it progresses. As an example on page 5, the following propositions and a conclusion reduced to skeleton form read as follows.

- 1.—Energy is indestructible. (This is "energy" considered from the standpoint of the physicist.)
- 2.—Power is one of the manifestations of energy. (Here "power" is again used as a term in physics or mechanics.)
- 3.—Knowledge is power. (Here the terms are given a slightly poetic turn.)
- 4.—Therefore knowledge is indestructible and it follows that the knower or the possessor of knowledge is also indestructible; at least that part of him that has to do with knowing.

We have in this argument for immortality a reckless use of analogy, and a use of terms in which the definition does not remain a constant. Logically this is inadmissible. Faulty reason results.

The doctrine of reincarnation is presented by the author with force and simplicity. Its ethical concomitants are stated in unambiguous language. For example: "I am an immortal spirit—a free, unique and self-determining agent—whose chief business is to develop my individual powers and possibilities, without in any way interfering with others in making similar development."

The essay is interesting and important, in that it makes available a great body of teaching in a condensed form, and that it does so in readable English. An educated man cannot afford to remain ignorant of its contents. Whether he accepts it may be another matter. Perhaps, however, even a skeptic may admit with Emerson that, "God screens us evermore from premature ideas. Our eyes are held that we cannot see things that stare us in the face, until the hour arrives when the mind is ripened; then we behold them, and the time when we saw them not is like a dream."

F. J. N., JR.

Clarke: Fundus of Eye

THE FUNDUS OF THE HUMAN EYE; An Illustrated Atlas for the Physician. By Ernest Clarke, C.V.O., M.D., F.R.C.S.; Consulting Surgeon to the Central London Ophthalmic Hospital, etc., Hon. Fellow, Downing College, Cambridge. London: Humphrey Milford Oxford University Press, 1931.

Since the introduction of the simplified luminous ophthalmoscope and the slit lamp, ophthalmoscopy has come within the province of every physician.

Although it is now easy to see the fundus of the eye, it is not so easy to interpret what is seen. This volume is a small, handy atlas containing 51 ophthalmoscopic colored plates corresponding with definite pathologic conditions. With its aid it should be easy for any physician who uses the ophthalmoscope to determine the condition from which a patient suffers, if there are signs in the fundus, and every practitioner needs a book like this, than which we know of no better in the field.

Medical Clinics of North America

THE MEDICAL CLINICS OF NORTH AMERICA. Boston Number. Volume 15, Number 4, January, 1932. Philadelphia and London: W. B. Saunders Company. Issued serially, one number every other month. Per Clinic year, July, 1931 to May, 1932. Paper \$12.00, Cloth \$16.00.

The January, 1932, number—the Boston number—of the Medical Clinics of North America contains 22 contributions, many of which are of exceptional clinical interest to practitioners. The opening paper by Dr. G. R. Minot deals with the prevention and treatment of chronic arthritis.

Dr. J. H. Means writes on the value of Lugol's Solution in the preoperative treatment of patients with exophthalmic goiter. There is an excellent contribution by Dr. E. P. Joslin and associates on diabetic coma, and one by Dr. C. S. Keefer on the clinical significance of jaundice. Other good practical clinical expositions are: "Tonsillectomy Versus Medical

Treatment in Cases of Rheumatic Fever," by Dr. W. H. Robey; "The Effects of the Digitalis Bodies on the Nervous System," by Dr. S. Weiss; "Jaundice in Heart Disease," by Dr. A. C. Ernestine; "The Clinical Course of Malignant Hypertension," by Dr. L. B. Ellis; and "Cases Illustrating the Interpretation of Positive Blood Cultures," by Dr. W. D. Sutcliffe.

Graves: Female Sex Hormonology

FEMALE SEX HORMONOLOGY; A Review. By William P. Graves, A.B., M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School; Surgeon-in-Chief to the Free Hospital for Women and to the Parkway Hospital, Brookline. Illustrated. Philadelphia and London: W. B. Saunders Company. 1931. Price \$3.50.

Some of the most interesting chapters in modern research are those relating to the discovery and differentiation of the various hormones governing the sex functions of the female.

In this work of Dr. Graves, the plan has been to follow in chronologic order, using charts and microphotographs, the evolutionary steps by which a department of medicine has, within thirty years, risen from an insignificant position to one that may almost be dignified as a distinctive science.

There are 11 chapters, dealing with ovulation; the corpus luteum; the correlation of the uterus and ovary and their specific hormones; the relation of the hypophysis to sexual and reproductive cycles, including its distinctive lobular hormones; lactation and organotherapy. There is a good glossary and a selective bibliography.

The text unfolds the story in a simple, sequential and interesting manner and anyone who has but little previous knowledge of the subject can easily follow it. It gives all the essential facts necessary to obtain a firm grasp of this rather complicated development of medical science.

The old idea, that ovulation occurs, in human beings, at the time of menstruation, is rather thoroughly exploded and the reasons are shown for the generally accepted belief that human ovulation takes place midway between two menstrual periods.

All general practitioners, internists, gynecologists and obstetricians should be familiar with the ideas which are so well presented in this little volume.

Packard: Medicine in the United States

HISTORY OF MEDICINE IN THE UNITED STATES. By Francis R. Packard, M.D., Editor, *Annals of Medical History*. Volume I and II. 103 Illustrations. New York: Paul B. Hoeber, Inc. 1931. Price \$12.00 for the 2 volumes.

The author is well known as a medical historian and as editor of the *Annals of Medical History*. His "History of Medicine in the United States" first appeared in 1901 but, owing to the impetus given to the study of the history of medicine in this country during the last quarter-century and to the unearthing

of a vast amount of historical materials from various sections of the country by those interested, including the author, it has been necessary to entirely rewrite the work.

The present edition in two handsome, beautifully-printed volumes, is virtually a new work. It is based on records of early colonial days, on pre-Revolution publications, on the history of the Medical Department of the U.S. Navy and Army, on various state records and publications, private journals, etc. The development of medical schools is followed.

The author frankly acknowledges that there are still many gaps to be closed up before the history of medicine throughout the whole country can be considered as adequately covered; but no doubt these will be lessened as time goes on. In the meantime the present work is the most complete and authentic of its kind available and the author is to be congratulated on the thoroughness with which he has handled and classified the materials available. A feature of the work is its embellishment by numerous portraits and other illustrations.

These volumes will appeal to all who are interested in medical history or in the history of the United States (an important part of which they cover), but will be particularly valuable as collected source material for future medical historians and biographers.

Kowarski: Clinical Microscopy

KLINISCHE MIKROSKOPIE; Atlas und Leitfa-den. Von Dr. A. Kowarski, Berlin. Mit 14 Bildern im Text und 309 grösstenteils farbigen Bildern auf 80 Tafeln. Berlin und Wien: Urban & Schwarzenberg. 1932. Price geh. RM 42.— geb RM 45.—

Those who read German will find Dr. Kowarski's atlas of clinical microscopy an excellent one. The colored plates are especially clear and apparently touched up so as to bring the characteristic points to prominent notice. All important pathogenic organisms, cellular tissues and body secretions are included.

The typework is very beautiful and altogether the bookwork is in every way highly commendable.

Purves-Stewart: Nervous Diseases

THE DIAGNOSIS OF NERVOUS DISEASES. By Sir James Purves-Stewart, K.C.M.G., C.B., Knight of Justice, Order of St. John of Jerusalem, M.D. Edin., F.R.C.P., Senior Physician to Westminster Hospital, Physician to the Royal National Orthopedic Hospital, etc. Seventh Edition, Revised. St. Louis: The C. V. Mosby Company, 1931. Price \$10.50.

Purves-Stewart's book, which has now run into its seventh edition, is a general text on clinical neurology and is not intended as a systematic treatise on nervous diseases. General practitioners will find it an almost indispensable diagnostic manual, furnishing them with the data necessary for the differential classification of patients who present themselves with general symptoms which will fit in with many nervous pathologic states.

The subjects covered are dealt with from the elementary stage, the opening chapters dealing

with the general anatomy and physiology of the nervous system. The following chapters (there are twenty-six altogether) deal with special pathologic types, rather than with regional distribution of diseases. Thus we have abnormalities of sensation, motor paralyzes trophoneuroses, reflexes, psycho-neuroses, etc., discussed.

The numerous illustrations, in black and colors, are of clear value in elucidating the text.

The excellence of the work as a clinical manual has been well recognized and exemplified by the fact that it is now in its seventh edition, which has been revised so as to include any recently acquired knowledge of permanent value.

Donaldson: Morbid Histology

PRACTICAL MORBID HISTOLOGY: A Handbook For The Use Of Students and Practitioners. By Robert Donaldson, M.A., M.D., ChB. (Ed.) F.R.C.S.E. D.P.H.; Sir William Dunn Professor of Pathology in the University of London; Director of the Pathological Department, Guy's Hospital Medical School; etc. With Foreword By Sir Humphry Rolleston, Bart., G.C.V.O., K.C.B., M.D., Regius Professor of Physic, University of Cambridge. Second Edition. With 214 Illustrations. St. Louis: The C. V. Mosby Company. 1931. Price \$12.00.

This book, which has reached its second edition, is intended, not only for students beginning the study of morbid histology, but also for all those who find it necessary to revive their knowledge of this subject for examinations.

This edition has been enhanced by the addition, when possible, of a brief account of the naked-eye appearance, as well as of the histologic aspect, of specimens of pathologic tissue and in this way the subject is linked up with clinical practice. With these qualifications the work, which is to a large extent a compilation, is essentially a student's manual (and a good one), written particularly for those attending British medical schools.

There are 22 chapters, with appendices devoted to histologic technic, etc., and good indexes.

Abderhalden: Biologic Research Methods

HANDBUCH DER BIOLOGISCHEN ARBEITSMETHODEN, Unter Mitarbeit von 900 bedeutenden Fachmännern herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden, Direktor des Physiologischen Institutes der Universität Halle a. d. Saale. Abt. IV, Angewandte chemische und physikalische Methoden, Teil 5, 1. Hälfte, Heft 7 (Schluss). Berlin: Urban & Schwarzenberg. 1931. Price RM 19.—

The seventh section of the first half of Part 5, Volume 4, (Chemical and Physical Methods) of Abderhalden's encyclopedic work on biologic methods deals with the occurrence and estimation of unusual chemical substances in normal and pathologic urine. There are three contributions on this subject.

Sluss: Emergency Surgery

EMERGENCY SURGERY. By John William Sluss, A.M.; M.D., F.A.C.S., Associate Professor of Surgery, Indiana University School of Medicine; and John Walter Martin, M.D., F.A.C.S., Vice President and Surgical Director, United States Fidelity and Guaranty Company, Baltimore, Md. Assisted By David Hart Sluss, M.D., F.A.C.S. and Camilius Bowen DeMotte, B.S., M.D. Fifth Edition, Revised and enlarged. With 797 Illustrations some of which are printed in colors. Philadelphia: P. Blakiston's Son & Co., Inc. 1931. Price \$5.00.

The fifth edition of Sluss's *Emergency Surgery* adheres to the original purpose and plan of the book; namely, not written as a textual presentation of surgery, but as a guide to the general practitioner as to what to do when confronted with a case requiring immediate surgical attention.

The text has been revised to bring it up to date. New chapters have been added dealing with postoperative nursing, gastric ulcer and emergency gall-bladder operations, acute pancreatitis and especially some new ideas in the treatment of fractures.

The volume is a handy reference work for the desk of any practitioner, especially the industrial surgeon.

Chamberlain: Medicine for Nurses

A TEXT-BOOK OF MEDICINE FOR NURSES. By E. Noble Chamberlain, M.D., M.Sc., M.R.C.P., Senior Assistant Physician and Cardiologist, Royal Southern Hospital, Liverpool; Physician, Birkenhead General Hospital; Deputy Consulting Physician, Walton Infirmary, etc. With a Foreword by Miss E. M. Musson, C.B.E., R.R.C., Chairman, General Nursing Council for England and Wales. New York and London: Humphrey Milford, Oxford University Press. 1931. Price \$5.00.

In this textbook the author has set forth such facts regarding the practice of internal medicine as he thinks nurses ought to know. The main themes are the descriptions of different diseases and their treatment, especially considered from the point of view of nursing. The knowledge of the nature of the disease gives the nurse an intelligent background for the treatment which she is helping to carry out.

Uncommon conditions are specially marked, so that they need only be referred to if necessary.

General information, referring to bacteriology, dietetics, therapeutics, etc., is included in separate chapters.

The arrangement is by regions and systems of the body.

There are good summaries at the end, with glossary and a copious index.

The book may be regarded as an excellent one for its purpose and as a text for those preparing for nurses' examinations.

MEDICAL · NEWS



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Chinese Dentist Ekes Out Living

In China the dentists appear to be having a rather poor time of it, and at least one has sought a way to supplement the income from his stomatologic arts, by turning to pictorial art as a side-line (or perhaps dentistry is the side-line). Which ever way it is, this timely picture shows that A. Chan, of Canton, is both a dentist and a photographer.

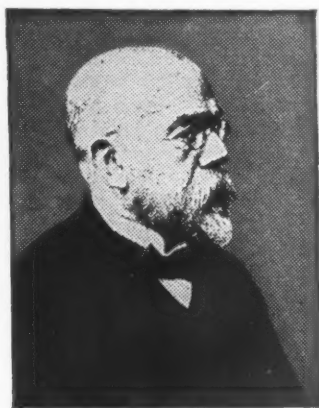
Protein-Free Antiserums

An editorial in J.A.M.A., Sept. 19, 1931, draws attention to the alleged preparation of protein-free serum "eluates" containing specific antitoxins, agglutinins,

hemolysins and complement-deviating antibodies. Research is necessary to verify the claims for the new substances, but they are probably, if not absolutely protein-free, nearer to that condition than any other similar products.

Anniversary of Tubercle Bacillus

This month (March) marks the fiftieth anniversary of Dr. Robert Koch's an-



ROBERT KOCH, THE GERMAN
DOCTOR WHO DISCOVERED THE
TUBERCLE BACILLUS

nouncement of his discovery of the tubercle bacillus, on March 24, 1882, and that event will be celebrated in various ways.

Koch's motto was, "Be Never Idle," and he followed it closely, his labors being tremendous and his work thorough. He did not announce his epoch-making discovery until nearly a year after it was made.

He was born in 1843 and passed to his rest in 1910; two years after he visited this country to attend the Sixth International Congress on Tuberculosis, at Washington.



Sir Henry S. Wellcome, LL.D.

Henry S. Wellcome, whose name is associated with many projects for the advancement of medical science, notably the Wellcome Historical Medical Museum and the Wellcome Research Institution (both in London), was recently knighted by King George.

Sir Henry was born in Wisconsin and spent his early years in Minnesota, being a naturalized British citizen, though he spends a part of every year in the United States and is honorary president of the American Pharmaceutical Association and a member of several learned societies and clubs in this country, as well as being an honorary fellow of the Royal Society of Medicine and the Royal Society of Tropical Medicine, London, and of many other scientific societies in England and on the Continent.

European Clinics

Three cooperative clinic tours of Europe have been organized for the summer of 1932, under the auspices of the state medical journals and conducted by the Amerop Travel Service. These are open to physicians in good standing and their families.

Tour No. 1 sails June 7 and returns Aug. 3; minimum fee, \$894. Tour No. 2 sails July 19 and returns Sept. 7; minimum charge, \$774. Tour No. 3 (including London and Paris only) sails July 19, returning Aug. 12; minimum fee \$365.

The schedule arranged for these tours seems to be very complete and satisfactory, and those who are interested should secure full details from Amerop Travel Service, 400 Madison Ave., New York City, or 132 N. La Salle St., Chicago.

Doctors and Charity

"If the commercial value of the services now being rendered free by physicians were to be reckoned, it would constitute a philanthropy so huge that the gifts of some of our well-known welfare associations, in comparison, would pale into insignificance."

—Editorial in *Pittsburgh Sun-Telegraph*.

General and Insurance Medicine

Our interesting contemporary, *Medical Insurance*, has, for the time at least, come to the end of that particular road and will suspend publication as such. The journal will be continued, with a changed and broadened editorial policy, under the name of *General and Insurance Medicine*. We wish them success and prosperity.

Send for your copy of the 1931 INDEX to CLIN. MED. AND SURG.

Civil Service Examinations

The United States Civil Service Commission announces the following-named open competitive examinations:

Senior Medical Officer	} Cancer Diagnosis and Treatment
Medical Officer	
Associate Medical Officer	

Applications for the positions of Senior Medical Officer, Medical Officer, and Associate Medical Officer must be on file with the U. S. Civil Service Commission at Washington, D. C., not later than March 22, 1932.

The examinations are to fill vacancies in the United States Veterans' Administration throughout the United States.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city, or from the United States Civil Service Commission, Washington, D. C.

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To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE AND SURGERY, North Chicago, Ill., will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is

to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physician's use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment, or medicinal supplies. Make use of this department.

When requesting literature, please specify whether you are a doctor of medicine, dentist, medical student, or registered pharmacist, or a nurse.

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| X- 95 | Everything for the Sick. Lindsay Laboratories. | X-545 | The Etiology and Treatment of Hay Fever—Hay Fever Antigens. The National Drug Company. |
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| X-120 | Building Resistance — Guiatonic, William R. Warner & Co., Ltd. | X-560 | This Perfected Potent Remedy For Skin Diseases—Healoderm. Healoderm, Ltd. |
| X-196 | "Facts Worth Knowing." Intravenous Products Co. of America, Inc. | X-570 | Urinary Tests and Color Charts for Practical Use in Office Diagnosis. Od Peacock Sultan Co. |
| X-258 | Prophylaxis. August E. Drucker Co. | X-571 | Detoxification in the Treatment of Intestinal Infections. The Wm. S. Merrell Company. |
| X-318 | Blood Clinical and Laboratory Diagnosis. A book of 160 pages by Henry Irving Berger, M.D. Battle & Company. | X-579 | A "Charming" New born baby Necessity. Loofash, Vegetable Sponges. "NSS" Sales Co. |
| X-392 | Arthritis. Its Classification and Treatment. Battle & Co. | X-586 | HVC (Hayden's Viburnum Compound). New York Pharmaceutical Co. |
| X-410 | Acidosis. A Warning Sign in Pregnancy — Alka-Zane. Wm. R. Warner & Co., Inc. | X-587 | Ethical Health Bulletin No. 1. New York Pharmaceutical Co. |
| X-456 | Science Applied to Tobacco. Health Cigar Company, Inc. | X-588 | A Few Notes Regarding Psychoanalysis. Fellows Medical Mfg. Co., Inc. |
| X-465 | Diagnosis of Cardio-Vascular Diseases, by Henry Irving Berger, M.D. Od Peacock Sultan Co. | X-589 | The Therapeutic Value of Chemical Foods. Fellows Medical Mfg. Co., Inc. |
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| X-524 | Balance, the Importance of the Acid-Base Equilibrium of the Body. The BiSoDol Company. | | |

- X-611 Vera-Perles of Sandalwood Compound. The Paul Plessner Company.
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- X-620 Rheumatism. Old Facts — New Ideas—Atophan. Schering & Glatz.
- X-632 Foxglove Farm, New Thoughts on Digitalis Action and Dosage. Upsher Smith Co.
- X-635 Niazo, Schering, a Modern Genito-Urinary Antiseptic for Oral Use. Schering Corporation.
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- X-648 Pharmacotherapeutics of Delbiase, a Compound Product of the Halogen Salts of Magnesium. Laboratoire De Pharmacologie, Inc.
- X-649 A Primer of Practical Dermatology by Dr. Francois Debat, Former Chief of the Dermatological laboratory, St. Antoine Hospital, Paris. E. Fougera and Co., Inc.
- X-650 Gynaecological Hints. The Denver Chemical Mfg. Co.
- X-651 "Storm" Binder and Abdominal Supporter. Katherine L. Storm, M.D.
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- X-657 Menorrhagia and Metrorrhagia—Mamma-Ovary Co., Mamma-Pituitary Co. (Harrower). The Harrower Laboratory, Inc.
- X-658 Ultraviolet Radiation—What, Why and How, by George E. Crosley, M.D. The Burdick Corporation.
- X-659 Light Therapy Supplement. Pregnancy and Lactation, a Review for Physicians. The Burdick Corporation.
- X-661 Transargan. Doho Laboratories.
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- X-677 The 6 Essentials of the Ideal Bismuth Preparation. E. Fougera & Co., Inc.
- X-678 Information for Physicians. S. M. A. Corporation.
- X-679 The Gastric Temperament — Calbis-Ma. William R. Warner & Co., Inc.